

ESSER LITERATURE BRIEFS

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MAY 2022

**The Department of Research &
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Memphis-Shelby County Schools

ESSER Literature Briefs

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Academics

Extended Summer Learning

April 2021

Author: Hannah L. Pallotta

Strategy

Provide an 8-week fifth quarter in the summer of 2021 with a focus on English/Language Arts (ELA) and mathematics.

Description

Targeted students in grades Kindergarten to 11th grade that are below a specific academic threshold will attend an 8-week fifth quarter in the summer of 2021 that focuses on ELA and mathematics instructional support.

Recommendations

- A significant portion of funds should focus on the instruction of mathematics and reading.^{7, 11, 14, 15, 16}
- Funds should be set aside for fostering the participation of disadvantaged students.^{7, 11, 12, 14, 15, 16} Districts should encourage students to attend the program consecutive summers to increase the academic impact.¹²
- “Resist the temptation to micromanage programs and give local schools and teachers leeway in how to structure and deliver programs.”^{7; 11, 14, 15, 16}
- Begin planning summer programming as early in the year as possible and ensure needed materials are delivered on time.^{7, 12, 15, 16}
- Give hiring preference to teachers who have taught past summer programs; “effective and motivated teachers.”^{7, 13, 15, 16}

Background

The summer learning gap is uniquely American; although the summer break is lengthy, it does not significantly lower in-class time to learn in comparison to other nations.¹ A study that assessed summer learning loss found that children’s test scores were on average at least one month lower in the fall than scores taken the previous spring.² The summer learning gap does not affect all students equally; as one study observed it is low socioeconomic status (SES) students who show the greatest loss of learning. Jencks and Phillips also estimate that half or more of the gap measured in the 12th grade reflects continuity of differences evident at the start of 1st grade.⁴ However, as noted by Kendi, when speaking of the gap between Black and white students’ scores, it is important to make the distinction that, “the racial problem is the opportunity gap...not the achievement gap.”⁵ Because of this, it is evident that some kind of intervention is needed to help students, specifically historically oppressed students, from falling behind. A study done about the cost of summer programming found that districts tend to spend less per-week, per-pupil on summer programming than they do on education during the academic year.⁶ “We conclude



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that providing a summer learning program can cost between \$1,109 and \$2,801 per student per summer for a five-week schedule that includes food, transportation, and facilities.” They noted that the key cost driver was staffing so lowering the student-to-instructor ratio has significant cost implications.

Summer programs have shown mixed results on both the long- and short-term academic benefits.

- A well cited^{9, 11, 15, 17, 18} meta-analysis of almost 100 studies⁷ found that students who completed remedial summer programs can be expected to score about one fifth of a standard deviation higher than the control group on outcome measures. They also found that middle-class students had more positive effects than students from disadvantaged backgrounds. Summer programs that provided small group or individual instruction produced the largest impact on student outcomes. The study showed that remedial summer programs may have a larger effect on math achievement than on reading. However, the achievement advantage gained by students who attended summer school may diminish over time.
- A study of Durham Public Schools’ summer school program found similar results.⁸ Students who needed to pass both the mathematics and the reading portion in order to promote to the next grade only had a one in ten chance of being successful, while students who only needed the mathematics portion stood a much greater chance at promotion. Put differently, reading had a low success rate.
- The long-term effects of summer learning programs are still unknown.⁶ “There are not enough studies on large-scale summer learning programs to provide evidence that urban districts’ students make achievement gains commensurate with the district’s investment.”¹⁹
- Contrasting the above findings that summer programs had better outcomes for math than for reading, another study found that in their study of summer school programs in charter schools in Kansas City, MO, students’ reading achievement increased significantly.⁹ Data analysis showed that students’ STAR Reading scale scores increased significantly between pre- and post-tests. Students self-reported that they improved their math skills more than their reading skills, however, the math scores were not available for analysis.
- Locally, the Superintendent’s Summer Learning Academy (SSLA) has been in effect for three years in Memphis-Shelby County Schools. After the second year, the research department evaluated the program to see if any gains achieved during the program persisted.¹⁰ No statistically significant differences were found between the SSLA participants and the comparison cohort, with the exception of NWEA MAP Reading in the spring 2019. This shows that while there were not immediate academic benefits for rising Kindergarteners who participated in SSLA, participation in SSLA combined with a year of Kindergarten instruction gave students a boost in the end of the year reading formative assessment.
- A study more generally about out-of-school-time (OST) programs found that these programs can have positive effects on at-risk students’ reading and mathematics



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achievements.¹¹ OST programs that have one-on-one tutoring also have positive effects on at-risk students' achievement in reading.

- Lastly, in the longest study of summer learning programs, beginning in 2011 and ending in 2017, researchers tracked outcomes for three years after students entered the second and final year of summer programming.¹² The program offered short-term benefits to students in mathematics after one summer. Those who were high attenders outperformed the control group of students in mathematics in the fall and again the following spring. After two summers in the program, high attenders were rated higher on social-emotional skills than the comparable control group, however this did not continue into spring 2017. They found that three school years after the summer program, high attenders' academic benefits decreased in magnitude and were not statistically significant. Also, they did not find evidence that the program affected anything that was not specifically targeted such as suspension or attendance rates during the school year.

What does a Successful Summer Program Look Like? Small Class Sizes, Support Services, & Enriching

- Some form of parent involvement produced larger effect than programs without⁷; gaining 'parental buy-in' potentially increases enrollment and attendance.¹³
- Small learning groups were cited often as being successful^{7, 9, 12, 13, 14, 15, 20}; Individualized instruction produce the largest impact on student outcomes^{7, 9, 11, 14} Classes capped at 20 students were found to be more effective in producing achievement gains.^{7, 13}
- Support services were provided (meals, transportation, childcare, etc.)^{7, 9, 10, 11, 12, 13, 14, 15, 16} "Policymaker should earmark funds for transportation...and for food services...and to provide childcare for younger family members."
- Teachers have creative freedom with lessons;^{7, 9, 13, 14, 15, 16} Teachers are encouraged to use new teaching strategies and use more hands-on activities to encourage student engagement.^{9, 13}
- A fun atmosphere; time for educational games, extra-curricular activities, opportunities for enrichment, etc.^{7, 9, 10, 11, 12, 13, 14, 15, 16} "The programs provided many students with opportunities that they might not have had otherwise, such as to swim, rock climb, cook, and experience new environments."¹²; ⁹ "Programs should address the developmental needs of the whole child and offer a variety of activities."¹¹
- At least five weeks of programming with at least three hours of instruction per day; increasing the weeks could increase attendance rate.^{12, 13} Debate around the amount of hours/weeks a program should be differ greatly^{21, 22} but most agree that 5 weeks can produce short-term benefits^{12, 13, 21}



Extended Summer Learning

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Tutoring as an Intervention

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Tutoring as an Intervention

May 2021

Author: Shelby G. Roberts, Ph.D.

Key Findings

- Tutoring is consistently cited as an effective intervention that provides large, meaningful impacts on student learning even compared to other intervention programs.^{1, 2}
- “Tutoring—supplemental one-on-one or small group instruction—has been promoted as an effective method for helping students learn, particularly those who have fallen behind.”²
- Elementary tutoring often shows the largest gains, but secondary mathematics tutoring is also effective.
- High-dosage tutoring is the gold standard for tutoring and has shown the largest student gains in reading and math.
 - Tutoring is most effective when delivered during school hours in 30–60 sessions at least 3 times per week.
 - Having tutoring built into student schedules allows for more equitable access to the services as well as consistent usage.
 - Tutors can be paraprofessionals, teachers, or recent, well-trained college graduates.
 - If strategically implemented, high-dosage tutoring can be implemented in a cost-effective manner.

Support for Tutoring as an Intervention

- Tutoring is cited as the most effective of all educational interventions followed only in scale by detailed student feedback and progress monitoring and cooperative learning.¹
- On average effective tutoring can move a student from the 50th percentile to the 66th percentile on academic gains, a stable gain of about 0.35 standard deviations (SD; which is considered substantial in educational settings) was found across three separate large scale meta-analyses.^{1, 2, 3, 4}
- A plethora of tutoring programs exist that have vast differences in their implementation. However, the findings are consistent that “tutoring interventions exert substantial effects on learning across a wide range of program characteristics.”⁴

Difference in Student Groups

- Economically disadvantaged students are less likely to sign up for free after-school tutoring.⁵
- While other interventions often show lower effects for students of color, tutoring did not have a significantly different effect for these students compared to their White peers.¹
- Black students and female students took advantage of free after-school tutoring more often than their Hispanic/Latinx, White, Asian, and male peers.⁵

Elementary vs. Secondary Students

- Historically, younger students show the most benefit from interventions for a variety of reasons,⁶ and thus tend to exhibit a higher return on investment.⁷



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- While overall effects for math and reading tutoring programs are similar, reading tutoring tends to be relatively more effective for students in Pre-K through 1st grade, while math tutoring tends to be more effective for students in 2nd through 5th grade.⁴
- Additionally, high-school math tutoring can yield significant gains as well on both math assessment scores and grades.⁸
- Studies on tutoring are more common for elementary grades, thus the impacts of middle-grades and high-school tutoring could potentially be minimized due to their lower frequency of reporting.
- Reading programs focusing on “explicit instruction (e.g., in phonics, decoding, and/or structural analysis)” show strong results in 1st grade through 3rd grade.^{9, 10, 11}

Best Practices and High Dosage Tutoring

High dosage tutoring (HDT) typically consists of personalized tutoring that takes place multiple times per week during the academic school day and delivers hundreds of hours of tutoring in a single academic year.¹²

- “Based on the current research, high-dosage tutoring seems to be most effective in early grades literacy and high school math.”¹³
- HDT incorporates the following characteristics, which could also be utilized as a best-practices model in after-school programs:

Frequency

- Ideally, HDT should provide at least 30–60-minute tutoring sessions three times per week.^{14, 18}
- Studies have found little evidence that once-a-week tutoring is sufficient to generate meaningful gains.^{15, 16, 17, 25}
- 2nd through 5th grade students showed the most gains when tutoring occurred 3 days per week, while Pre-K–1st grade had more gains with 4–5 days per week.^{18, 19}
- Students who received at least 35 sessions in a year had significantly larger positive effects than those who participated at a lower rate (increase of 0.13–0.17 SD).²⁰

Group Size

- Ideal group sizes range between 2–3 with any more than 4 students tutoring moving into small group instruction which is not as effective.¹⁴ In grades 2–5, a 3:1 ratio has been shown to be ideal.⁴
- Novice tutors should not work with more than 2 students at a time.¹³
- 1:1 tutoring is the most effective form of tutoring,¹⁰ although this option can prove extremely costly for districts.^{2, 24}

Scheduling

- Tutoring should happen during the school day. Building tutoring into student schedules allows for consistent dosage of tutoring as well as equitable access to these services.¹³
- The impact of during-school tutoring programs (1.0 SD) is twice as large as that of after-school programs (0.4 SD).⁴ After school tutoring programs can vary widely in their



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implementation and their level of fidelity. This results in mixed outcomes for these types of programs.

- In a random assignment study of a national after-school program, no positive effects were found on reading test scores or grades for elementary or middle school students.²¹ Most large-scale control-studies find insignificant or minute effects for after-school programs.²⁷
- Alternatively, many small-scale after-school tutoring programs have shown moderate student growth as compared to their non-tutored peers.^{24, 28, 29}
- Parents indicated that they often selected tutoring programs based to the convenience and transportation logistics, and students who were on free and reduced lunch status signed up for free after-school tutoring at much lower rates.⁵
- Tutors should remain connected with the same students over the course of a year. This allows the students to build a relationship with their tutors and the tutors to understand the students' learning needs.¹⁴

Staffing and Training

- A different skill set is needed for tutors compared to teaching a normal size classroom. This lower skill set can likely open the door for effective tutors to be well-trained volunteers and college graduates.
- Teacher-led tutoring shows the strongest gains for students followed by paraprofessionals^a (with a formal tie to the school and tutoring role), community-volunteer, and parent-volunteers, respectively.^{4, 22}
- Tutors should receive high quality intensive training before engaging with students.
 - A four-week intensive training was implemented with college graduates prior to 9 months of on-site tutoring which significantly improved student test scores and grades.^{6, 23}
 - Modest, though smaller, effect sizes have been shown in non-experimental tutoring designs for tutors who have a modest amount of training (e.g., 4+ hours) though most of these volunteers were education majors.^{24, 26}

Cost

Cost of tutoring programs can be prohibitive for some districts; however, a few key strategies can vastly decrease the per-pupil expense and even make tutoring one of the most cost-effective school-based interventions.

- Using paraprofessionals including recent college graduates on single- or two-year contracts that are geared as a year of service can show strong benefits at a much lower cost than utilizing teachers.⁶
- Create tutoring pods of 3 students for upper elementary grades where students benefit from peer interaction and can increase the number of students served.²
- Frequently track data to best utilize the tutors and hone in on areas where students struggle.

^a Recent, well-trained college graduates who worked full time as tutors were classified as paraprofessionals in the meta-analyses.



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Current Tennessee Programs

There are three current high-dosage pilot tutoring programs taking place in Tennessee school districts.¹³ While only one district is similar to Memphis-Shelby County Schools (MSCS) in size and scope, Memphis-Shelby County Schools should connect with each District to ascertain their success and challenges in order to build off of their models.

- Lenoir City Schools (LCS) near Knoxville has roughly 2.5K students. It sought to combat some of the learning loss associated with pandemic related closures. They piloted a high-dosage tutoring program with 20 juniors and saw almost all students make growth as measured by pre- and post-ACT test. “Both tutors and participants reported strong engagement and found value in the tutoring opportunity.” LCS is planning to pilot an 8th grade focused program using juniors as tutors in the fall.
- Metro Nashville Public Schools (MNPS) serves around 85K students. They piloted a tutoring program for seniors in 2020. During the program they saw a 95% attendance rate for tutoring and plan to scale this program. After evaluating and course-correcting challenges in the senior program, MNPS is now piloting a high-dosage tutoring program for 150 students focused on literacy in grades 3–5 and numeracy in grades 6–9 in spring 2021. They are conducting the pilot as a randomized control trial in order to evaluate its effectiveness.
- Trousdale County Schools (TCS) enrolls about 1.3K students. They implemented a high-dosage tutoring program during a scheduling block for Tier 2 first grade students. The block scheduling will continue in Summer 2021 as part of a summer literacy camp program. They plan to implement the program district-wide in the following academic year.

Endnotes

Short research-based briefs, guides, and publications on tutoring best practices.

1. [High-dosage tutoring: Planning and implementation guide](#) by SCORE Institute of TN.
2. [High-dosage tutoring that works for students](#) by SCORE Institute of TN.
3. [The transformative potential of tutoring for prek-12 learning outcomes: Lessons from randomized evaluations](#) by Latif Jameel Poverty Action Lab.
4. [Accelerated student learning with high dosage tutoring](#) by EdResearch for Recovery.
5. [Toolkit for tutoring programs: Equitable access to quality tutoring](#) by National Student Support Accelerator. (Long guide)



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Prepared by the Department of Research & Performance Management

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Implementing Blended Learning in Classrooms

Prepared by the Department of Research & Performance Management

Implementing Blended Learning in Classrooms

April 2021

Author: Ashton Toone

Strategy

Implementing blended learning in classrooms.

Description

Providing tailored coaching support to teachers, paraprofessionals, central office support staff on virtual instruction.

Recommendations

- When considering curriculum choices for blended learning, a standardized and comprehensive curriculum has been shown to be most effective for both students and teachers.
- Reconfiguring staff support will require onboarding adjunct positions such as learning coaches to assist with online learning needs.
- For optimal gains in student achievement, students should have opportunities for self-paced work.

Overview

In 2016, Evergreen Education Group conducted a case study of nine schools who had integrated the Fuel Education (FuelEd) online curriculum and platform into their existing blended learning or virtual programs. Of the nine programs, five of the schools were whole school programs and the other four were credit recovery and remediation programs. Whole school programs applied a variety of blended learning techniques in order to support the FuelEd curriculum while the credit recovery and remediation programs were situated within traditional public and charter schools in which students participated in only the FuelEd courses to recover credits or improve their academic performance. Though each of the programs were at differing stages of the implementation phase, each of the schools reported improved student outcomes as a result of the FuelEd curriculum.

Blended learning allows students to access a variety of course offerings at various paces.

- All of the schools featured in the case study used the FuelEd curriculum as their primary curriculum.
 - The FuelEd course catalog includes core courses, electives, advanced courses, credit recovery and remediation for students in K-12 grades.
 - Crater Lake Charter Academy (CCLA) noted that teachers can customize a student's course through FuelEd to provide a personalized learning plan for students.
 - CCLA follows a block schedule in which students attend 1.5-hour blocks in which students participate in blended learning activities.
- For schools with limited course offerings, FuelEd provided courses that otherwise were unavailable to students at that school.
 - Carver Military Academy school leaders noted that the variety of course offerings encouraged students to stay enrolled as Carver is a choice school.



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- Schools offered a wide range of schedule options that were flexible for students.
 - Of the five whole school programs, all five schools required their students to come on campus for a certain amount of time. The schedule options for the schools were as follows:
 - Elementary and middle school students spend 6 hours per day Monday through Thursday and high school students come as needed; K-8 students appeared on campus Monday-Thursday for 5.5 hour days while grades 9-12 appeared Thursday and Friday for 5.5 hour days; All students attend Monday-Friday in cohorts with staggered start times (8 a.m., 9:30 a.m., and 11:30 a.m.) for 5 hours each day; All students appear on campus on Tuesday and one additional day for 7 hours - grades 9-12 appear on Wednesday and grades K-8 appear on Thursday.
 - The fifth and largest whole school program required K-5 students to attend in-person on Friday and sometimes Wednesday as needed for intervention purposes. Students in grades 6-8 attended on Monday and Wednesday. Unlike the K-8 students, students in grades 9-12 were held to a trimester schedule where they had the option to attend in-person on Tuesday and Thursday.
 - Of the credit-recovery programs, all programs required students to take virtual classes in their campus' respective learning or media labs.
 - Of the four programs, only one program allowed students to complete their courses on the weekend rather than the school day. Other programs offered evening course options.
- Offering customized self-paced work empowers students to become independent workers and manage themselves.
 - Several schools showed student improvement reading and math gains and noted that the gains were due in part to students working independently.
 - The two longest-running FuelEd whole school programs reported an averaged 242% growth in middle school math MAP scores and an averaged 140% of growth for elementary school students comparable to students in traditional schools in their district and state.

By reconfiguring staffing needs to support blended learning, teachers are able to customize online learning and build better rapport with their students.

- Teachers responsible for delivering FuelEd courses typically are held to a standard school day. However, schools employ support staff who are responsible for tasks such as coordinating FuelEd enrollment, assisting with technical needs, and providing remedial support as needed.
 - Because Carver Military Academy opted to use FuelEd as a means of course recovery, they employed a coordinator who managed all related needs for the program.
- Poudre School District Global Academy (PGA) allows its teachers to supplement the FuelEd curriculum with offline materials in order to meet student needs.
 - PGA emphasizes utilizing student data in order to build supplemental materials.
 - PGA teachers both teach on-campus and online courses as well as tutor and coach students online. An integral part of PGA's model is parent involvement in the academic coaching process.



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- The Springs Studio for Academic Excellence (SSAE) utilizes both the online teachers provided by FuelEd as well as five full-time Student Support Coaches (SSC) to provide remediation and instruction for students who need individualized support.

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Senior Reading Advisors

Prepared by the Department of Research & Performance Management

Reading Advisors

April 2022

Anne Walton Garrison

Strategy

Continue employing Senior Reading Advisors to improve the literacy skills of struggling readers in middle and high schools.

Description

Memphis-Shelby County Schools (MSCS) instituted the position of Senior Reading Advisor (SRA) in 2018–19. It is designed to be a highly skilled, 12-month instructional position focused on addressing foundational literacy deficits in middle- and high-school students. Select middle and high schools have one SRA position each. These schools offer intensive reading classes, taught by their SRA, for students whose reading skills are significantly below their grade level. The SRA-led classes employ the online program Reading Horizons for part of the instructional content and for benchmarking students' reading progress.

Most, if not all, of the SRAs have extensive classroom instructional experience as well as administrative and/or instructional coaching experience. Beyond teaching struggling readers, SRAs also design and facilitate school-based and District-level content-literacy professional-development sessions for teachers of other subjects in grades 3–12.

Synthesis of Literature

The SRA position/program is unique to MSCS, and thus there is not a body of literature evaluating its specific effectiveness. However, the SRA role is similar to other programs that implement highly specialized, literacy-focused teaching positions, and Hanover Research has produced several reports on topics relevant to the SRA approach to improving secondary literacy. This report synthesizes information from the Hanover materials to provide SRA-relevant recommendations.

General Practices for Improving Adolescent Literacy²

The What Works Clearinghouse (WWC) reviewed National Assessment of Educational Progress (NAEP) scores, along with a host of studies (correlational, longitudinal, quasi-experimental, and experimental) to determine several key recommendations for improving middle and high school literacy. Derived from “strong” or “moderate” evidence subjected to rigorous external peer review, WWC recommended the following (quoted from pp. 5–6):

- **Provide explicit vocabulary instruction:** Both English language arts and content-area classes should include explicit vocabulary instruction, as this helps students learn new words and improves their ability to independently construct meaning from text.
- **Provide direct and explicit comprehension strategy instruction:** Comprehension strategies consist of “routines and procedures that readers use to help them make sense of texts.” Examples of comprehension strategies include asking and answering questions, summarizing, paraphrasing, locating the main idea, and using graphic organizers. In addition to modelling and explaining the strategy, the



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teacher should offer feedback on guided practice and emphasize the importance of independent application.

- **Provide opportunities for extended discussion of text meaning and interpretation:** Aimed at improving reading comprehension and encouraging critical analysis, such discussions may involve small groups of students or an entire classroom. Such discussions should incorporate varied points of view, based on textual evidence, personal experience, and reasoned arguments, expressed during prolonged exchanges with the teacher or other students.
- **Increase student motivation and engagement in literacy learning:** To create confident, lifelong readers, teachers should construct a supportive learning environment that provides useful feedback, treats mistakes as growth opportunities, encourages self-determination, and makes literacy experiences relevant to students' interests and everyday lives.
- **Make available intensive individualized interventions for struggling readers that can be provided by qualified specialists:** When students need more support than a typical classroom teacher can offer, schools should provide intensive interventions through reading specialists or highly-trained teachers. Since no single cause for reading difficulties exists, students may struggle with skills as varied as phonemic awareness, phonics, vocabulary, fluency, word analysis, and/or comprehension. Thus, schools should tailor interventions to the needs of each student.

Critical Components for Successful Implementation of Middle and High School Reading Intervention¹

The Consortium on Reading Excellence, Inc. (CORE), a research-focused implementation advisory board, reviewed evidence on the factors associated with the failure of reading interventions. Using that information, they created a framework of critical components for the successful implementation of reading interventions for the average middle and high school. These critical components are:

- **Effective professional development** that features the following characteristics:
 - Provides teachers time and guidance to “design their program, identify helpful tools, and ultimately bring their personal style to established theories” (p. 7).
 - Gives teachers a basic understanding of related theory, “which could take 20 to 40 hours due to reading instruction complexity” (p. 7).
 - Contextualizes theoretical models using “modeling and demonstrations, classroom visits and video media, and... workshops that simulate relevant conditions” (p. 7), allowing teachers to learn in a low-risk setting.
 - Is multidimensional, with “an appreciation for teachers’ and students’ background while also taking into account the larger context of the school environment” (p. 7).
 - Integrates structured feedback and provides ongoing coaching once teachers are in the classroom.
- **Effective and aligned instructional tools** that “enable teachers to transform their professional development into action” (p. 7). According to research from the Southwest Educational Development Laboratory, successful reading intervention



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programs for secondary students feature the following instructional components (quoted from p. 8):

- **Motivation to read**, specifically, intrinsic motivation to persist in a reading task.
- **Decoding skills and fluency**, which includes basic decoding skills and fluency.
- **Language comprehension**, which includes linguistic knowledge, background knowledge, making inferences, and self-regulation.
- **Transacting with text**, engaging in a dialog with the text, especially in making personal connections.
- **Significant systemic reorganization and support** that addresses systemic process issues in a holistic manner. The revamped system should include mechanisms for collective discussion and troubleshooting, monitoring of implementation, ongoing professional development, and coaching for continuous improvement.

Select Recommendations for Implementing Support Classes in Secondary School³

The Education Trust compared instructional practices in four high-impact high schools to instructional practices in demographically similar average-impact schools and found very different approaches between the two groups. “Through additional instructional time, the high-impact schools implemented supplemental academic support while allowing students to stay on track for on-time graduation. Average-impact schools, however, slowed course-taking for struggling students” (p. 6). The Education Trust therefore “cautions against slowing down the coursework progression of students who may struggle in a particular subject area, [as] it may inhibit students from completing college preparatory coursework and catching up to grade-level peers” (p. 6).

Another important finding from the above study was the following:

High-impact schools strategically organize struggling and average-performing students into smaller classes to enable teachers to spend more time with students who are considered to be more at-risk. At high-impact schools, administrators commit to smaller class sizes for struggling students even if it results in larger class sizes for Honors- and AP-level courses in an effort to help the lower-performing students “get to that next level.” Meanwhile, average-impact schools maintain uniform class sizes regardless of students’ proficiency levels. (p. 10)

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RTI & Intervention Materials & Platforms

Prepared by the Department of Research & Performance Management

RTI & Intervention Materials & Platforms

May 2022

Author: Cardella L. Leak, PhD

Strategy

Memphis-Shelby County Schools (MSCS) utilizes the i-Ready, Edgenuity, Illuminate FastBridge, and Public Consulting Group (PCG) EdPlan platforms and tools to support the implementation of the Tennessee Department of Education Response to Instruction and Intervention (RTI²) Framework for students receiving academic interventions.

Key Findings

- iReady is highly correlated with the Tennessee Comprehensive Assessment Program (TCAP) assessment for reading and mathematics.
- On average, students with disabilities, English Learners, students who are economically disadvantaged, and students of color who used i-Ready instruction experienced greater learning gains than students in the same populations who did not use i-Ready.
- Edgenuity has had success at positively impacting score on national standardized test scores.

Response to Instruction and Intervention (RTI²) Overview^{1, 2}

In 2014, Tennessee launched the statewide initiative known as Response to Instruction and Intervention (RTI²) aimed at better supporting students' individual learning needs. Defined by the Tennessee Department of Education, Response to Instruction & Intervention (RTI²) is "a framework for teaching and learning that includes regular screenings to identify student areas of need and a tiered model of intervention for those that need additional help. In Tennessee, it is also used to determine the eligibility of students to receive special education services for specific learning disabilities (SLD)." RTI² emphasizes intervening with students as they begin to struggle academically to avoid prolonged academic difficulties. RTI² offers additional instruction with multiple entry and exit points based on students' needs. A student who is showing slight deficits in specific areas may receive targeted interventions through Tier II instruction for a specific period of time, while a student who has significant needs may receive extended, intensive interventions through Tier III instruction. RTI² has requirements for the type of screening, and intervention needs at each level. The requirements are found in Appendix A.

RTI² Within Memphis-Shelby County Schools²

Through MSCS's Curriculum and Instruction Department, a RTI² Team was developed to support schools in their implementation. Additionally, platforms and tools such as Illuminate FastBridge, i-Ready, Edgenuity, and PCG EdPlan are used by MSCS to support the implementation RTI². Below is more detail about these platforms/tools and how effective they may be in making academic improvement and gains.



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Illuminate FastBridge^{2,3}

Illuminate FastBridge is research-based universal screening and progress monitoring for academics and social-emotional behavior (SEB) with accompanying intervention recommendations. FastBridge's valid and reliable assessments help educators identify students' academic and SEB needs faster, align the right interventions at the right time, and measure whether interventions are helping students catch up—all in one platform and in up to half the test time.

MSCS used Illuminate Fastbridge as the universal screening tool in 2019–20 through 2021–22. All students K–8th grade take the Universal Screener: fall, winter, and spring. All K–1st grade students are administered the earlyReading and earlyMath universal screening assessments. All 2nd–8th grade students receive the Illuminate FastBridge aReading and aMath assessments. Students scoring below the 10th percentile on either assessment receive follow-up benchmark assessments to assist in determining the appropriateness of a tiered intervention.

Due to disruptions related to the COVID pandemic, Illuminate Fastbridge completed a report that reflected actual learning loss from Fall 2019 to Fall 2020.⁴ In reading, the mean annual growth score declined significantly relative to baseline in Grades 1, 3, and 6. In math, the mean annual growth score declined significantly relative to baseline in Grades 3–8. This report also looked at learning loss by months. The results showed that kindergarten and first grade students performed about one-month behind, and Grade 5 and 6 students performed about two to three months behind the typical Fall scores. The learning loss for Grades 2, 4, 7, and 8 were close to typical yearly variation.⁴

i-Ready⁵

i-Ready Personalized Instruction (i-Ready) is a research-based program for students in kindergarten through eighth grade with an individualized plan for instruction based on each student's performance on the online, adaptive i-Ready Diagnostic (Diagnostic). Once students complete the Diagnostic, i-Ready builds a unique lesson plan with a differentiated starting point for every learner based on their overall and domain-level placement. i-Ready allows teachers to add lessons and/or adjust the lesson sequence provided to individuals or groups of students. Lessons provide explicit instruction and extensive practice, offer supportive feedback, and build conceptual understanding for learners of all levels.

Effectiveness⁶

Nationally, students using i-Ready Personalized Instruction for an average of 45 minutes or more per subject per week for at least 18 weeks showed statistically significantly greater growth than the average student who did not use i-Ready Personalized Instruction during the 2017–18 school year.

Overall, students (K–8) using i-Ready for Reading experienced score gains 46% greater than those not using i-Ready, and those students (K–8) using i-Ready for Mathematics experienced score gains 38% greater than those not using i-Ready, meaning those students who used i-Ready tended to grow more than those who did not.



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Using data from over one million student who took i-Ready Diagnostic in the 2017–18, specific students groups using i-Ready Personalized Instruction all saw significantly greater growth than students from the same subgroups who did not have access to the program during the 2017–18 school year: English Learners (53% for reading and 49% for math), students with disabilities (27% for reading and 38% for math), students with socioeconomic disadvantages (35% for reading and 42% for math), and students of color (35% for reading and 42% for math).

Linked with Standardized Tests⁷

Data has been collected across the country to study the relationship between the i-Ready Diagnostic and leading national and state assessments for both English Language Arts (ELA) and Mathematics. Correlations demonstrate that when students score high on one assessment, they also tend to score high on the other. A high correlation between two assessments provides evidence that the two assessments are measuring similar constructs.

Correlations between i-Ready and consortium and state assessments consistently exceed established benchmarks in education (high correlations of greater than 0.70). Specifically in Tennessee, data was collected from approximately 63,000 students across 12 districts in Tennessee. The research study found a strong correlation between i-Ready Diagnostic scores and scores on the TCAP administered during the 2020–21 school year. On average, across grades 3–8, the correlation for English Language Arts was 0.81 between i-Ready Diagnostic and TCAP scores. On average, across grades 3–8, the correlation for mathematics was 0.83 between i-Ready Diagnostic and TCAP scores.

Edgenuity⁸

Edgenuity, renamed Imagine Learning, MyPath 6–12 is a research-based online intervention program for reading and math that delivers targeted, age-appropriate learning paths for secondary students. Every lesson uses a gradual-release instructional model, so students receive the exact instruction and practice they need at that moment. The data and reporting features give educators powerful tools to monitor student performance in real-time and provide additional help where needed.

Effectiveness

A case study completed in a Georgia high school of students who previously did not pass their Spring Georgia High School Graduation Tests (GHS GT) found that after completing, on average, about 73% of their Edgenuity courses, 78–93% of those students passed their GHS GT tests during the following fall test administration.⁹

In a limited study of students participating in a Michigan-based Success Virtual Learning Center (SVLC), certified teachers used Edgenuity to assist students with achieving significant improvement in their mathematics skills, as demonstrated by their growth on the Northwest Evaluation Association Measures of Academic Progress. Additionally, these students demonstrated significant improvement on the Basic Achievement Skills Inventory (BASI) mathematics, reading and written language tests, exceeding annual growth expectations in all tested subject areas.¹⁰



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Public Consulting Group (PCG) Edplan¹¹

EDPlan is a suite of tools and services from PCG that helps promote a plan for student success. EDPlan's features have been designed in partnership with teachers, education professionals, and project management experts and has been used in more than 30 states.

MSCS transitioned from paper-based intervention plans to the EdPlan online platform in the 2017–18 school year. Specifically, MSCS utilizes the EdPlan RTI Tracker tool, which has allowed RTI² Advisors to work collaboratively to support schools in their implementation of RTI² by developing RTI² Plans within the EdPlan platform for Tier II/Tier III students to address specific deficit areas in literacy and/or mathematics.

Educators have instant access to real-time data and graphs in EdPlan, with each graph displaying the aim lines, scores, trends, and level of mastery that help educators tell the story of the student's progress toward their academic goals. When the student's session responses became erratic, the data prompts the teacher to make an instructional change to increase this student's achievement.

Conclusion

Overall, the Tennessee Department of Education has provided good guidance for the RTI² framework to ensure that districts and teachers have the structure and resources necessary to provide all students with access to and support for reaching high standards and expectations. Using TDOE's guidance, MSCS has utilized and implemented various platforms and tools that have previously shown to result in favorable academic progress and gains.



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Appendix A

Required Elements of RTI² in Tennessee²

- **School RTI² Teams:** School RTI² Teams meet every 23 instructional days, at a minimum, to make data-based decisions that inform instruction/intervention.
- **Universal Screening:** The Universal Screening tool will be skills-based and provide national norms.
- **Tier I:** Quality core instruction will be provided to ALL students using grade-level Standards in ELA and Mathematics.
- **Tier II and Tier III:** Tiered interventions will be provided in addition to the core instruction provided at Tier I. Interventions will be research-based and will address a student's area of deficit. Tier II and III students intensive support in their skill areas of deficit in math or ELA. In total, Tier II elementary and middle school students must receive 30 minutes of daily intervention, and Tier II high school students must receive 150 minutes of weekly intervention. For Tier III students, the total minimums are 45 minutes daily for elementary and middle students and 225 minutes weekly for high school students.
- **Highly-Trained Personnel:** Highly-trained personnel will provide interventions. Highly-trained personnel are those who are adequately trained to deliver the selected intervention as intended with fidelity.
- **Progress Monitoring:** Progress monitoring, including careful review of student Performance data, will occur in the specific area of deficit either weekly or every other week.
- **Fidelity of Implementation:** Fidelity checks will occur for Tiers II and III.
- **Parent Contact/Communication:** Parents will be notified when their child is placed in tiered intervention, as well as be provided with a monthly review of their child's progress.



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Social Emotional Curriculum to Support Students Prepared by the Department of Research & Performance Management

Student Readiness

Social Emotional Curriculum

May 2021

Marie A. Sell, Ph.D.

Description

Memphis-Shelby County Schools has purchased Rethink, a curriculum designed to support social emotional learning in a school community. This literature review provides a description of social emotional learning and then covers the following topics:

- The importance of social emotional support for students, especially when coming out of crisis
- Teacher professional development and support needed to understand how social emotional support for students impacts learning and classroom behavior
- The academic outcomes associated with best practices of implementation of a social emotional support curriculum
- Best practices, pitfalls, and lessons learned in implementing a social emotional curriculum

What is Social Emotional Learning?

- Social emotional learning (SEL) focuses on five competencies: 1) self-awareness, 2) self-management, 3) social awareness, 4) relationship skills, and 5) responsible decision-making (CASEL).⁵ One model suggests that increases in SE competencies learned through school based programming first improve students' positive attitudes toward self and others (short term outcomes) and then increase positive behavior, academic success, and mental health (long-term outcomes).¹³
- Effective SE skills are an integral part of development. Effectively managing SE skills goes beyond supporting students in PK–12 education to providing skills that will be useful when facing challenges in college or the workplace. ¹⁹
- Effective SEL programs feature six criteria including that they are 1) developmentally appropriate; 2) culturally relevant; 3) systemic; 4) comprehensive; 5) evidence-based; and 6) forward thinking. ¹⁹

The Importance of Social Emotional Support for Students

- Research¹³ on school-based SEL programs has consistently found that they positively impact students' social behaviors and academic progress. Four meta-analyses together analyzed the findings from 459 SEL studies. Two of the meta-analyses examined outcomes immediately after program participation.^{8, 28} Both found moderate and significant effect sizes (.57 and .53) for SEL skills for students who participated in SEL programs compared to those who did not. They found small but significant effect sizes (range .19–.33) for attitudes, positive social behaviors, conduct problems, emotional distress, and academic performance with students trained in SEL performing better in all areas compared to non-participating peers.



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- The other two meta-analyses^{23, 25} analyzed studies that gathered follow-up data at least seven months after the program ended. These analyses found lasting positive effects from SEL training in all outcome areas (SEL skills, attitudes, positive social behaviors, conduct problems, emotional distress, and academic performance) (effect sizes range .07–.33).
- A summary of early studies examining the impact of SEL curricula on student outcomes found that K–6 grade students involved in programs exhibited fewer risk-taking behaviors (i.e., alcohol or marijuana use), expressed emotions more appropriately, followed rules better, and more often stayed on task compared to students in control groups.²⁷
- In a school-to-school comparison, the school implementing a universal SEL program to all students and teachers had significantly fewer instances of internalizing behaviors and significantly more prosocial behaviors among students than the control school. These trends were evident for all students, however students at-risk for social-emotional problems before the program was implemented showed more positive gains in both areas compared to general education students.¹¹
- Randomized controlled studies showed that with SEL interventions there were improvements in academic effort and academic achievement using reading, writing, and math scores as indicators.¹⁹

Teacher Professional Development and Support

- Despite the research touting the benefits of incorporating SEL curricula into schools, there are very few teacher training programs that include SEL as part of their program requirements.^{6, 17} Yet, being effective as an SE teacher requires understanding the conceptual framework and why it is important,²⁴ being well-trained in the curriculum,²⁴ and having a certain level of competence in one's own social emotional skills.^{4, 22, 29}
- Teachers' own competence and ability to effectively use SE skills allows them to be better role models for students which is especially important in the younger grades;²⁹ and allows them to more effectively work through any unexpected reactions and responses from students which is especially important for students who have experienced trauma or have been in crisis.²⁰
- Additionally, leaders who have higher levels of emotional intelligence (including competence with SE skills) can navigate organizational change better. School administrators can use these skills to help teachers and staff work through school reform efforts or to make changes in school climate/culture.¹⁶
- School-based SEL programs in which teachers, administrators, and other school personnel are program participants along with students are most effective at creating positive changes in overall school climate.¹⁹ Successful programs allow for long periods of teacher and staff training in SE skills before implementing a curriculum at the school level for students. Not only do teachers need to learn additional skills and curriculum, other school staff face adjustments to their roles as well. For example, school counselors might need to shift their perspective conceptually. Instead of their role being to respond to a problem that occurs, their work would become consulting



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with students to prevent problems from arising.²⁶ Additionally, school counselors could become strong leaders in supporting SEL practices.³

- Ongoing teacher PD and teacher support improved implementation fidelity with teachers who initially had low implementation fidelity initially.^{7, 15}
- Bullying prevention programs have been more successful when teachers have had more training and coaching. Students exhibited higher emotional intelligence and earned better behavior grades with increased PD.²¹
- Teachers' beliefs about their own teaching and the level of support they have received is linked to the degree of fidelity to which teachers implement SEL curriculum in their classrooms.²²

Academic Outcomes Associated with Best Practices of Implementation

- A study examining implementation of SEL curriculum and student outcomes compared high implementation schools to low-implementation schools in four school districts. Three districts displayed statistically significant differences in student outcomes related to level of curriculum implementation. One district each showed that high-implementation schools had higher math scores (Gr 3–8), reading scores (Gr 3–8), or English I scores. GPA in one district was higher in high-implementing schools but in another district was lower in high implementing schools.¹⁸
- Student academic achievement increased by 11 percentile points on an index based on report card grades and test scores when SEL programs have been implemented with fidelity.^{8, 23}
- A meta-analysis of SEL intervention programs for students with social, emotional, and/or behavioral challenges showed that program participation improved academic outcomes (effect size 0.53) when program implementation adhered to key design elements.⁹
- Lasting positive effects were observed for Kindergarten students who participated in an integrated social emotional awareness and emergent early literacy curriculum in Pre-K that was implemented with moderate to high fidelity. Students in the Pre-K treatment classrooms compared to students in Pre-K control classrooms showed less disruptive behavior, had higher levels of learning engagement and social competence, and better phonemic decoding skills in Kindergarten across all classroom contexts. Additionally, treatment students who ended up in Kindergarten classrooms with a strong emphasis on reading showed stronger letter-word identification and sight word efficiency.²
- A meta-analysis of 213 studies⁸ identified four practices for developing the new SEL skills that students acquired, including 1) using an sequential and integrated skills curriculum, 2) using active learning to promote the skills, 3) focusing sufficient attention on skill development, and 4) establishing explicit learning goals. Schools that used all four practices showed more improvements in student SEL skills and academic progress than those that used only some of the practices.



Social Emotional Curriculum to Support Students

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Best Practices, Pitfalls, and Lessons Learned in Curriculum Implementation

- When new programs are introduced to school staff and teachers, they run the risk of being received as something that will compete with the teaching time necessary for students to meet state academic standards. To alleviate this, SEL programs work best when they are integrated into the curriculum. Additionally, teachers need to fully understand how SEL supports academic progress. An analysis of the overlap of SEL skills and one state's academic standards showed that SEL skills overlapped with approximately 2/3 of the 204 state standards, including listening skills, communication skills, problem identification, and analyzing options and outcomes.¹²
- SEL curricula that are too scripted might be more difficult for teachers to buy into because they do not meet the current and changing needs of the classroom or students. A strategy-based approach, where teachers learn different SEL strategies that can be applied to many contexts and activities as needed throughout the school day, has been well-received by teachers.¹
- A study²⁴ that interviewed and surveyed teachers and students found that while teachers viewed their SEL programs to be empowering to students, students took away very different messages. For example, they viewed that being a leader in their classroom equated to being quiet and compliant. To avoid these kinds of disconnections between teachers and students, the author suggested ensuring that teachers fully understood the program, its implementation, and how adjusting it might impact the outcome. Additionally, schools should listen to their students to make sure the program is working as intended.
- The five competencies of SEL skills (self-awareness, self-management, social awareness, relationship skills, and responsible decision-making) look different across development. For example, what a 5- or 6-year-old is capable of in terms of self-management is much different than a middle-school student or a high-school student; likewise for responsible decision making. SEL programs with curricula that match development are more effective.^{1, 18} Likewise, assessments of student competency with SEL skills should reflect developmental changes in children.¹⁴
- One expert in promoting SEL skills in schools cautioned that implementation an SEL curriculum takes work on the part of teachers and school administrators and they should be prepared for that expectation.⁴
- Being aware of culture when using SEL curriculum in schools is important to help read social cues accurately.⁴
- Noting parallels between the skills SEL programs can teach and the needs of students who have experienced trauma, one article pointed out the importance of planning implementation. Pawlo and colleagues²⁰ argued that this is especially important in "urban, high-poverty areas where trauma is highly-prevalent [and] students often struggle to succeed in school (pg. 40)." Careful planning of implementation to allow teachers time for buy in is crucial, especially when teachers and school administrators may be burned out from cycling through different reform initiatives that do not seem to make significant, sustained changes in school success.



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May 2021

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Key Findings

- Universal programs and selective/indicated interventions paired together to create a whole-school multi-tiered framework is recommended
- Universal screenings can help pinpoint students that need more resources and more intentional mental health services
- While training teachers about trauma is vital, specialized personnel with formal training need to be in schools, helping both students and teachers navigate trauma and social emotional learning

Strategies for Implementing School-Based Mental Health Centers

- Universal intervention^{1,2,3,4,5,6,7,8}
- Indicated/selective intervention^{7, 8, 9, 10, 11, 12}
- Multi-tiered intervention framework^{6, 8, 13}
- Mental health screenings^{9, 11, 14, 15, 16, 17, 18, 19}
- Training/Professional Development (PD) for teachers^{3, 6, 20, 21}
- Behavior specialists/trained, specialized personnel^{9, 10, 11, 13}

Universal (Preventative) Intervention

The main goal of universal intervention is to broaden all students' social emotional wellness by using a curriculum or framework throughout the entire school. A good rule of thumb is that if 15–20% of the population of a given setting (school, district, etc.) has certain behavior issues that are wanting to be addressed (e.g. exclusionary disciplinary actions), resources are better served providing universal services rather than individualized, direct services.¹ Looking at only high schools in the 2019–20 school year, the suspension rate for the District overall was 13.9%. This rate was higher for Black students and for students with disabilities (SWD) (16.3 and 20.7 percent, respectively). Districtwide in 2019–20, over all grade bands the suspension rate was 9.2 percent with the SWD rate at 14.7% and the Black student rate at 11.2%[†] (See [Figure 1](#) and [2](#) in the [Endnotes](#) for a look at the dashboard). Universal intervention is preventative intervention; this framework looks to teach students about coping mechanisms and social emotional well-being before any symptoms or behavior issues occur.

- Examples of successful models/studies of universal intervention:
 - A meta-analysis of seventy-three school-based universal programs showed that “the overall random effects mean was 0.21 (p < .001),” which indicates that students had significantly lower aggressive and disruptive behavior after participating in these interventions than the control group of students who did not participate. These programs tended to be more effective with lower socioeconomic status students and when the frequency of sessions was higher.^{2, 7}



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- School-Wide Positive Behavior Interventions and Supports (SW-PBIS) is a universal program meant to lower school behavior problems and promote positive student outcomes. Over 200,000 schools in the United States have used this model since its inception in 2000. SW-PBIS is not a curriculum but a framework and set of strategies to create a nurturing school culture. In this model, school staff develop clear behavior expectations that they model, teach, and practice. School staff is expected to give students higher rates of positive attention over negative attention. Data are collected surrounding behavior issues, including location, time, type, etc. School leaders use these data to assess if this system is working and to find areas of improvement. “If a high number of infractions occurs on the playground, the team would decide how to reduce the problem perhaps by reteaching expectations, increasing adult supervision, and/or increasing positive attention rates.”¹ Studies of SW-PBIS have found reduced problem behaviors, and two randomized trials found that SW-PBIS is associated with improvements in “school safety, academic achievement, positive student behaviors, and school climate compared to control schools.”

Indicated/Selective Interventions

This type of intervention is meant for specific students. Indicated interventions are for students who have shown problem behaviors. Selective interventions are for students who have not exhibited behavior problems but are assessed to possibly benefit from the program (anxious students).

- **Examples of successful models/studies of indicated/selective interventions:**
 - In the same meta-analysis mentioned above, forty-seven selective and indicated interventions were assessed and the overall effect size was similar at 0.26, which was significant. Interventions were found to be “more effective with regular education students than special-education students,” and programs implemented by teachers or researchers were more effective than programs implemented by graduate students.^{2, 7}
 - One study observed statistically significant changes on social and behavioral scales in at-risk middle school students after completing Solution-Focused Brief Therapy (SFBT). The school provided SFBT group treatment to 26 students during school hours with four trained adults: two masters in social work interns, the school social worker, and the researcher who has a PhD in social work. These four each led a small group of students in SFBT for eight weeks. The students showed positive changes in their social skills at the posttest and maintained these gains at the follow up at six weeks. This group also improved their overall classroom behavior post treatment. This finding was supported by teacher feedback. Parents were also surveyed and reported fewer homework completion issues.¹²

Multi-tiered Intervention Framework

- A multi-tiered intervention framework uses a whole-school approach to support the success of students with trauma.⁹ In this framework there are three tiers; the first



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two have been discussed previously. Tier 1 is universal supports, Tier 2 involves more specific supports for at-risk students or students with behavior issues, and Tier 3 is more intensive interventions for students suffering from trauma.^{6, 8, 13}

- In one specific example, the San Francisco Unified School District (SFUSD) implemented a multi-tiered framework entitled Healthy Environments and Response to Trauma in Schools (HEARTS) in 2009-10 to combat the school to prison pipeline.⁶ Each of the tiers include intervention or training for students, staff and caregivers, and for the entire system. In Tier 1 students received training on how to deal with stress, school staff received training on trauma and secondary trauma, and social emotional learning curricula was put in place in all schools. In Tier 3, students affected by trauma had individualized services and teachers were given support and referrals for more intensive care (see [Figure 3](#) in Appendix B for the entire diagram). The evaluation of the program found significant changes in knowledge about trauma, sensitive practices. Student engagement significantly increased. There was a significant decrease in behavioral incidents after one year; after five years there was an 87 percent decrease in total incidents. Out-of-school suspensions decreased by 95 percent after five years of HEARTS implementation.
- Another study followed the development of mental health centers in three different schools over five years.¹³ The study saw the continuation of the programs and the expansion of SEL to all students as success and did not detail the schools' data. Each school used local university graduate students to help implement their programs and used a tiered system. School B and C were able to continue and expand their programs, while School A did not continue after Year 5 due changes in school leadership.

Mental Health Screening

- There are two main types of mental health screenings: Universal screening and screeners for specific mental illnesses.
 - First, the universal screener is given to all students of the school to parse out whether students need mental health services.^{9, 11, 14, 15, 16, 17, 18, 19} Screening all students ensure that services are not only given when there are disciplinary issues, as not all students will cause classroom issues when they are in need of mental health services.⁴ One study emphasizes this need by saying, “The movement from a reactionary to a preventive and comprehensive method of student identification and support provides an avenue for more complete and efficient use of the skills of the school psychologist.”¹⁵
 - The second type of screener is for any specific mental illness (ex. PTSD¹⁸, Anxiety¹⁷, Depression, etc.¹¹) These could help point a school counselor/behavior specialist in the right direction. Some schools have used these as their main screener, but this could be limiting students' diagnoses.
- Some studies recommend screening parents or students at school entry.¹¹ “Early screening and detection can significantly support efforts to minimize risk for future emotional, academic, and social difficulties.”¹⁶ School entry screening can also provide a framework for expanding targeted intervention programs.⁹



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Training/Professional Development (PD)

- A study done in 2017 found that almost 50 percent of teachers surveyed felt they did not have suitable mental health training, and 85 percent expressed a desire to receive more training on the subject. Only 19 percent believed that their school had adequate mental health resources, while 22 percent believed their school had a clear plan to address students' mental health needs.³
- Trauma-informed training can reduce 'behavior issues' and exclusionary disciplinary actions in the classroom, which more often are given to Black students than to white students.^{6, 20, 22} This kind of trauma training can include information like, what is trauma, how it impacts children's behavior, establishing common language around trauma, and how to deal with burnout and secondary trauma.^{3, 6, 20, 21}

Behavior Specialists/School Counselors

- It is vital to have specialized personnel in the school building. There is a need for more of these professionals to be in the classroom and school setting to be able to meet the mental health needs of students.¹¹
- These specialized personnel can get to know the students and their unique needs. The student can engage with a trusted adult and the school counselor or similarly trained professional is able to bring their knowledge of the child's history into their work.¹³
- Many of the studies mentioned having outside, community-based partnerships to help create wraparound services for families.^{10, 11, 13, 23} Often times schools find their trained personnel through this kind of partnership. Schools may not be ready to have indicated/selective interventions, but community-based programs may be able to help. This can also help entire families, rather than just students; a family is more likely to get help if they are given resources and the parents are already familiar with the community-based partner's work.^{10, 13, 14, 23}
- There are different options in the research of what this person's title and training could be: examples in the literature show effective programs with a school social worker, a school psychologist, a school counselor, a community psychiatrist, a graduate or doctoral student from a local university in social work or psychology, a researcher with a PhD in those fields, etc. The most important aspect of this role is that the person has had formal training to interact with students with trauma and mental health issues.¹¹ While a meta-analysis found that programs led by graduate students were seen as less effective than programs done by teachers or researchers, this could be a more cost-effective way to boost the number of mental health workers in a school setting (as well as being a symbiotic relationship with local universities).^{2, 7, 10, 12, 13, 14, 15}

Return on Investment

- Setting realistic goals and timelines for measuring program effectiveness
 - It is important to remember that change in the social emotional learning of a child will take time. It is recommended that the Cabinet and Board allocate funds for these programs even if they have not shown immediate success in



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the upcoming years. Investing in the social emotional needs of our children is one of the best things we can do for their overall outcomes in the future, as shown in the research below of untreated Adverse Childhood Experience (ACEs) and mental illnesses (see [Background](#) section). As one researcher notes, however, society often looks at children as though they will one day be adults, rather than viewing them as human beings right now that deserve the best social emotional care that we can provide to them.²⁴ Funding is often based on the evaluation of the program. One researcher warns, that school-based interventions are “often evaluated immediately or shortly after the intervention. However, there is increasing evidence that some long-term effects are emerging and that although effects gradually decrease over time they can remain substantial.”⁴ It may feel as though funding SEL or school-based mental health centers is a waste of resources, but in reality, these programs could be having substantial effects on students and should be given time to develop before being discontinued or seen as a failure.¹³

- Evaluations should begin after at least two years so that the program has a chance to gain structure, and school staff and teachers get more time to learn best practices.
- Screening data can help schools/the District understand the scope/volume of student needs and resources can be adequately allocated.
 - More individualized screenings can show which students would benefit from intervention, but they can be costly in terms of both time and labor force.¹¹
 - “With these assessment data in hand [from screening at school entry], school districts are more able to advocate for additional funding to provide smaller classes, higher teacher-to-child ratios, and the hiring of mental health specialists.”¹¹
- Spending: Invest first in universal/preventative interventions, as this type of program is likely to reduce behavior issues and help students’ self-esteem and social emotional health overall^{1, 2, 5, 6, 15}

Background

- Around 20 percent of children and adolescents suffer from a mental illness²⁵ and around 60 percent of adults have said they experienced at least one ACE.²⁶ “The number of ACEs in childhood demonstrate a strong association with the likelihood of developing posttraumatic stress disorder (PTSD) and/or other negative mental health outcomes in adolescence.”¹⁶ One study has found that PTSD in children is underdiagnosed.¹⁸
- Children that experience ACEs or adolescents with depression are more likely to engage in risky behavior, such as alcohol and nicotine abuse or dependence, suicidal tendencies, school failure, aggressive behavior, etc. later in life.^{27, 28}
- Oftentimes without school-based programs, youth do not get the mental health services they should.^{29, 30} One study found that Black and white youth were equally likely to have a mental illness, but Black youth were half as likely as white youth to get help from specialty mental health services.²⁹ The same study found that school services, however, showed little ethnic disparity. Another study found that three



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barriers are common for children getting the mental health help they need: “(1) Lack of knowledge about child mental health and help-seeking pathways, (2) Stigmatization and parent blame (3) Challenges of multiagency collaboration.”³¹

- **Secondary Traumatic Stress (STS)** in an educational setting can be described as when an educator learns about a primary victim’s (often a student) traumatic experience and then experiences vicarious trauma. Symptoms of STS can be burnout, compassion fatigue, PTSD, etc.¹⁰ “Untreated STS may be among the hidden causes of undesirable workforce turnover for principals and teachers, particularly when STS and children’s trauma are clustered in high-poverty schools.”¹⁰



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Mental Health & Behavior Specialist Resources

Prepared by the Department of Research & Performance Management

Appendix B

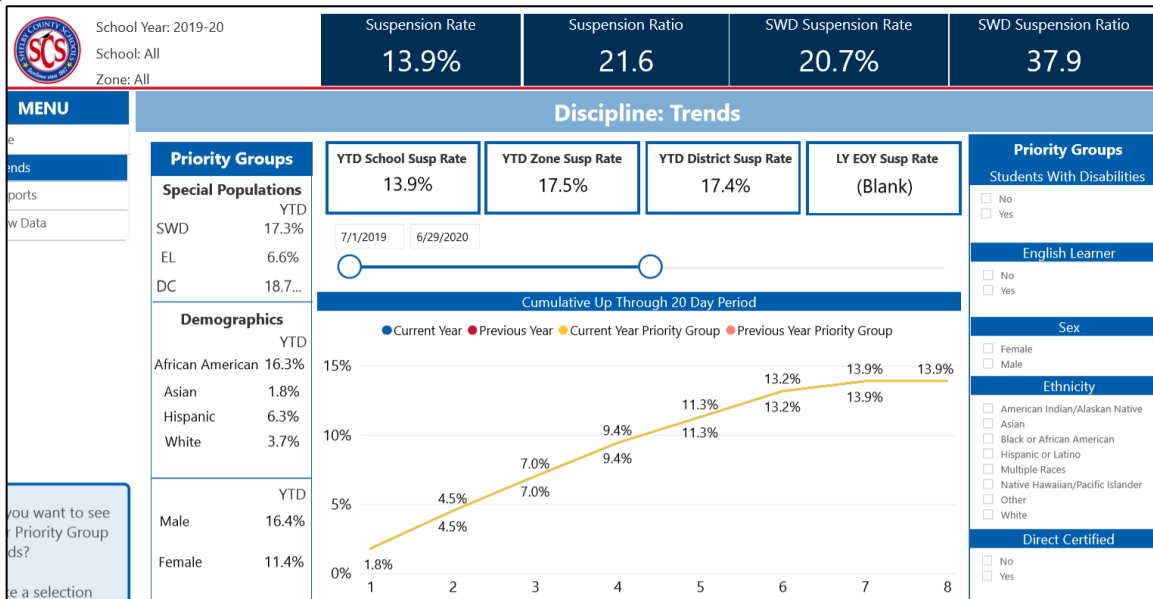


Figure 1: Power Bi Dashboard: Student Profile (ILD): Districtwide high school discipline rates for 2019-20

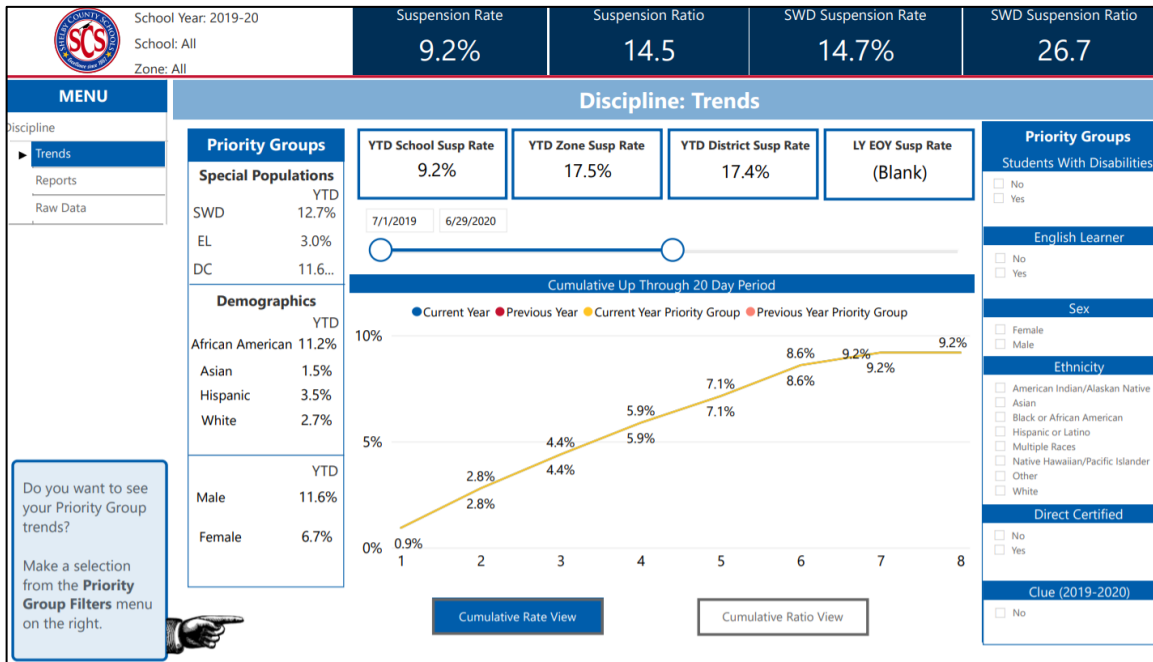


Figure 2: Power Bi Dashboard: Student Profile (ILD) Districtwide all grade bands discipline rates for 2019-20



Mental Health & Behavior Specialist Resources
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TIER 3: Targeted/Intensive Supports (Tertiary Intervention)	
LEVEL	
Students	School-based, trauma-specific individual, group, and family therapy services for students with trauma-related mental health difficulties; includes intensive collateral work with students' teachers, as well as consultation around Individualized Education Program (IEP) assessment and plans when IEP is warranted
Adults (staff and caregivers)	Brief crisis support for trauma-impacted school staff, and referral for more intensive services if needed
	Engaging and supporting parents/caregivers as part of their children's psychotherapy
System	Consultation around central district office personnel efforts to improve the district-wide Educationally Related Mental Health Services (ERMHS) process
TIER 2: Selected Supports (Secondary Intervention)	
Students	Psychoeducational skill-building interventions for at-risk students
Adults (staff and caregivers)	Wellness (non-treatment) support for school staff that addresses stress, burnout, and secondary trauma (e.g., teacher wellness groups)
	Participating in Coordinated Care Team meetings that address the needs of at-risk students and coordinate integrated responses, as well as; respond to school-wide concerns
System	Consultation to school or district efforts to re-examine and revise discipline policies and procedures, and alternatives to suspension
TIER 1: Universal Supports (Primary Prevention)	
Students	Classroom training for students on coping with stress
Adults (staff and caregivers)	Training and consultation for all school staff (e.g., teachers, administrators, support staff, paraprofessionals, and school medical and mental health staff) around (a) trauma-sensitive practices, and (b) addressing stress, burnout, and secondary trauma
	Psychoeducation and skill-building workshops for parents/caregivers on coping with stress
System	Providing a trauma-informed lens to school staff in their implementation of school-wide supports and interventions (e.g., Positive Behavioral Interventions and Supports, Restorative Justice/Practices, social emotional learning curricula)

Fig. 1 Examples of HEARTS tiered supports at three levels of intervention



Figure 3: The HEARTS Tiered supports from Dorado et al., 2016.⁶



Class Size Reduction with Educational Assistants

Prepared by the Department of Research & Performance Management

Class Size Reduction with Educational Assistants

January 2021

Author: Shelby G. Roberts, Ph.D.

Strategy

Reduce adult/student ratio (1:13) in Kindergarten through second grade.

Description

All K–2 classrooms will receive a full-time educational assistant that has been supported on foundational skills instruction and best instructional practices.

Recommendations

- When reducing class sizes, having additional certified teachers is likely to produce better results than reducing the adult to student ratio with paraprofessionals.
- If paraprofessionals are used, clear expectations of their role must be understood by both the supervising teacher and the paraprofessional.
- On-going, targeted professional development will improve the successfulness of the paraprofessionals in helping students with academic skills.
- Time should be allocated for paraprofessionals to plan with their supervising teacher.¹⁵
- Paraprofessionals should focus on implementing successful interventions for students in small group and one-on-one settings, but not solely focus on the lowest attaining students.¹⁵

Smaller class sizes (with certified teachers) have shown mixed results on both the long- and short-term academic benefits.

- The TN STAR program from the early 1990's remains the prominent study on small class sizes.^{1, 2, 3, 4} It found that small classes (13–17 students) in grades K–3 had a positive, albeit small impact on math and reading in 3rd and 5th grade. The largest gains were seen in the first year of being enrolled in a smaller class regardless of grade and decreased in the following years.^{5, 6, 7}
 - Follow-up studies showed that these students were more likely to enroll in college with Black students, free and reduced lunch recipients, and students from the poorest tertile of districts having even greater effects. They were also 1.6% more likely to earn a college degree.⁸
 - The cost of program however, barely met the threshold for a positive return on investment.²
- A large-scale study out of Minnesota used a quasi-experimental design to mimic controls and treatment groups. The authors found a positive effect of class size reduction by 10 students for reading and math on 3rd and 5th grade achievement scores. However, these effects were extremely small (0.04–0.05 standard deviations), thus the authors stated, “class size reductions are unlikely to lead to sizable increases in student learning.”³



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- Another quasi-experimental design used state data from Connecticut schools. This study found no support for smaller class sizes in the earlier grades on 4th and 6th grade achievement scores. Even effects as small as a 2–4 percent increases in scores were accounted for by other factors not related to class size.⁹
- A longitudinal study did not find support for smaller class sizes over a three-year period in Hong Kong primary schools. Students were enrolled in reduced class sizes for zero, two, or three years at the same school and their 3rd grade achievement was compared. Across all schools there were no consistent positive effects of the reduced class sizes, though some within-school positive effects were found.¹⁰
- In Texas schools, smaller class sizes in grade four and five did show positive effects on student achievement in 4th grade and slightly positive effects in 6th grade. However, the authors note that the benefits of the small classes pale in comparison to those resulting from improved teacher quality.¹¹

“By simply increasing the numbers of [teachers’ assistants] in a school, the attainments of all pupils will not necessarily improve.”¹²

- The STAR experiment mentioned above also investigated regular classrooms (22–25 students) with and without teachers’ aids (TA). It found no evidence that students in a regular-sized class with a teacher and TA performed any better on tests in 3rd grade. By 5th grade, students in K–3 classes with a TA performed slightly worse on their standardized tests.^{6, 7} Because there was no significant difference between the treatment- and control-group, they are often treated the same in follow-up studies.^{5, 6}
- A UK based study looked at the amount of TA’s support (as measured by the teacher) on students’ math, science, and reading skills in the mid-2000’s. Students in two cohorts ($n = 8,200$) were tracked over one year on academic skills and other influencing factors. They found no positive effect of the TA support for any subject across any year, and 76% of the results were in a negative direction. Students who often need the most support, such as students with special educational needs, tended to show even starker negative outcomes. Those students who received the most TA support had lower outcomes than those who had received little or no support.^{13, 14, 15}

Interventions where paraprofessionals have been successful often have focused training, adequate support, and clear job roles.

- Paraprofessionals (PP) often report confusion about job responsibilities,^{16, 17} a lack of planning time with the supervising teacher,^{15, 17} and limited training.^{15, 19, 30} Studies that address these issues found more success with their use of PPs. An in-depth literature review of reading interventions in K–3 using PPs found that training, direct and on-going supervision and feedback, and scripted lessons were more important than the number or type of sessions for student success.²⁰
- A meta-analysis showed that targeted interventions using trained and supported TA’s showed positive results when focusing on one-on-one or small group instruction in literacy for struggling students.¹²



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- One study focused on the effect of fluency training for PPs on student reading. Paraprofessionals participated in five-hour training sessions focused on fluency instruction. They found the training to be effective with more PPs using praise and error correction accurately and to the required extent needed. However, the PPs struggled to maintain consistency with their new skills over multiple lessons. Student reading was not impacted by the PPs' successful training, likely because it remained highly accurate throughout the study.²¹
- Another meta-analysis²² showed that reading tutoring implemented by PPs improved student reading skills compared to control groups (i.e., no tutoring).^{23, 24} However, the studies that also had certified teachers as tutors showed that teachers were more effective than PPs in improving student reading.^{25, 26}
- Conversely, a meta-analysis on successful interventions in elementary mathematics found that paraprofessional-led tutoring (either in a small group or one-on-one) was as effective as teacher tutors. It is worth noting that the paraprofessionals had extensive professional development and were similarly credentialed with most holding bachelor's degrees in these studies.³⁴
- In another study, targeted professional development and coaching allowed PPs to implement various strategies with efficacy. A two-hour workshop follow by hour long in-person coaching sessions resulted in significant improvements in the fidelity of the PPs' implementation with special education students.²⁷ It is worth noting that single-day workshops do not provide this increase in effective implementation.^{28, 29}

Behavior modification and reduction can be supported by paraprofessionals with prior training.

- "Paraprofessionals are among personnel most often tasked with providing intervention for children with [disruptive behavior disorders]."³¹
- Paraprofessionals who are receiving professional development training on behavior interventions reported more "operationally defined behavior concerns" than those without training. The training gave the PP's the ability to accurately identify behaviors and appropriate intervention which is essential in modifying student behavior.³²
- When working with students with different learning needs, one case-study found that training and coaching for PPs ($n = 3$) resulted in more appropriate student behavior and less disruptive behavior for those students.³³

Paraprofessionals who move into teaching benefit from their prior experience in the classroom and are retained at higher rates.

- TA's who transition to full-time teaching positions tend to be more racially diverse, older, have lower test scores, and come in through alternative licensures. They persist in the field longer, and their elementary students show higher growth achievement when compared to other novice teachers specifically in reading.³⁵
- Teachers coming through the Leap to Teacher program, a paraprofessional to teacher pipeline, showed that six years into the program 60% of participants were still in the profession and in the city.³⁶ This higher retention rate was echoed in a study that compared paraprofessionals, emergency licensure teachers, and Peace-Corps



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teachers, and found that those teachers who entered the profession through first serving as a PP had the highest retention rates.³⁷



Class Size Reduction with Educational Assistants

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Home Literacy Kits

Prepared by the Department of Research & Performance Management

Home Literacy Kits

January 2021

Author: Marie A. Sell, Ph.D.

Strategy

Provide at-home literacy kits for parents of students in grades K–11 with training from a non-profit organization grounded in literacy research with proven results.

Description

Students and parents will receive literacy kits grounded in the “Big 5” components of reading. The kits will provide parents with the resources to reinforce strategies to learn how to read.

Recommendations and Take Aways

- Research largely supports training parents to use specific skills to teach their children the content of home literacy kits although it has not identified the best skills and strategies to use.²² Incorporating the specific reading skills appropriate for reinforcing instruction at each grade-level might maximize program success.
- Much of the literature covered incorporated the targeted reading skills into the context of a book that was basis of the home literacy kit. Using literacy kits with both books and targeted skills might be most effective.
- Program engagement is higher when books are of interest to the children.⁸ Using leveled readers as the basis for home literacy kits to bridge students’ interests and reading levels could help program participation.
- Given that highly structured programs are much more effective than loosely structured programs,²⁰ any purchased home literacy curricula should have explicit, grade-level instructions and activities for parents and students to work on.
- Implementation quality should be maintained by ensuring that parents are trained to the level of mastery for the skills they are expected to teach. Perhaps demonstration videos available on the MSCS website for parents to review as needed would be a helpful tool.

Theme: The use of family/home literacy kits has been linked to improved reading in students in grades PK – 5.

- Correlational studies have shown that parent-child reading with young children is positively linked to emergent literacy and to reading achievement.^{6, 21}
- A significantly higher percentage of PK students who participated in a 12-week *Raising a Reader* program with their parents made significant gains in receptive vocabulary compared to a control group as measured by the PPVT. Participating and control students were in PK classrooms located in schools with low levels of third-grade reading achievement.⁷



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- In a study conducted in schools serving middle-income, suburban families, parents of Kindergarten students were invited to opt into a 12-week reading intervention program that provided literacy exercises for students to practice at home. The exercises extended reading instruction occurring in the classroom. Students in the intervention group performed significantly better than those in comparison groups on reading tests after the 12-week program, controlling for parent interest in participating in the program and students' initial reading level. Additionally, a higher percentage of students in the intervention scored 80% or greater on the posttest than did comparison-group students.¹⁸
- A meta-analysis²² examined 16 peer reviewed studies that were designed with an intervention group and a control group to determine the impact of three types of parent-child reading activities on reading achievement for students in grades K-3. The biggest effect size (1.15) was for parents trained to do literacy exercises relevant to the books with their children, which equated to 17 points on a standardized test. Also having an impact was providing training to parents on how to listen to their children read to them (effect size = 0.52 or 8 points on a standardized test). Found to be not effective was asking parents to read to their children (effect size = 0.18, which was not statistically different from 0).
- This meta-analysis also found that interventions using family literacy kits were effective for students in grades K-3, for students reading at both grade level or below, and for students in families of working-class and middle to high economic class.²²
- A study of low-income students and their parents in grade 2 examined the effects of participating in a home fluency program. Parents attended parent training meetings, then basal readers were sent home twice a week with explicit instructions for parents. Findings showed that students in the intervention had higher posttest fluency standard scores than students in the control group. Additionally, a higher percentage of parents in the intervention group reported helping their children with homework and reading to their children multiple times per week compared to the control group.¹⁷
- A meta-analysis revealed that not all home literacy kit programs monitored implementation quality which can negatively influence program impact.⁹ Another study recommended that parents be trained to the level of mastery on the reading skills to be taught to children.¹⁰

Theme: Longitudinal analyses show positive effects can be long-term and can emerge months after tutoring ends.

- In an experimental design, an intervention developed to enrich Head Start parent language use, extend parent-child interaction, and promote dialogic reading through book kits and dramatic play kits rich with literacy activities resulted in significant gains for participating students in emergent literacy skills (letter and sight recognition, letter naming fluency, letter sound fluency, short word and nonsense word fluency) and teacher ratings of academic performance at the beginning of Kindergarten compared to non-participating students.³



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- Students in British Infant School (5-7 years) and Junior School (8-13 years) who were tutored by their parents using paired reading techniques demonstrated both short-term (≤ 17 weeks) and long-term (17+ weeks) gains in reading accuracy compared to students not tutored.²⁵
- Students in grades 1-2 in high-poverty schools who participated in a three-year summer book program performed better on standardized reading achievement tests after the three years compared to students in the control group.¹
- Struggling readers in grade 1 and their parents participated in a summer reading program. Student reading levels did not improve from spring to fall, but did from fall to winter.⁸

Theme: Parents can be effective at teaching reading skills to children at home and are eager to do so.

- Given specific tutoring skills, appropriate materials and feedback, parents can have a positive impact on student academic success.^{11, 12, 16}
- Training parents with specific techniques for coaching children reading²⁴ and instructions for how to engage in paired reading²⁶ resulted in positive effects for children at risk of reading failure.
- Parents who participated in a reading program with their young children sought out activities (e.g., watching videos, attending workshops) to learn how to be better reading teachers.⁷
- A meta-analysis of studies examining the effectiveness of reading tutors for elementary and middle school students found that parent tutors were equally effective as college-student tutors and community volunteer tutors for all grade levels at improving overall reading, reading letters and words, reading fluency, and writing. Reading tutors did not impact students' reading comprehension.²⁰
- A meta-analysis of studies that examined training parents to tutor their primary (grades K-3) and intermediate (grades 4-6) children analyzed different parent instruction methods. Using written instructions, modeling, and supervised practice to train parents all had moderate to large effect sizes for the treatment group on reading fluency, word recognition, and reading comprehension at both age levels.¹⁰
- A study administering parent surveys found that parents of students in grades 1-3 reported knowing more about how to teach their children grade-level reading and writing skills after participating in a home literacy bag program during the year.¹³

Theme: The most effective literacy kit programs give explicit directions to parents on how to teach reading. Parent training should be detailed but can be done in a relatively short period of time.

- A meta-analysis of studies examining the effectiveness of reading tutors found a moderate effect size (0.59) for highly structured reading programs compared to a low effect size (0.14) for loosely structured programs on overall reading,



Home Literacy Kits

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reading letters and words, reading fluency, and writing for tutored students in elementary and middle school.²⁰

- Another meta-analysis revealed that short parent training sessions (1-2 hours) and longer sessions (3-13.5 hours) were equally effective at training parents to teach reading skills to their children.²²
- Parents of Kindergarten students were trained to teach reading sight words, recognizing beginning and ending sounds, and blending sounds into new words in a 90-minute session that included opportunities for role playing and feedback. Literacy kits included activities and lessons structured for parents. Students in the intervention performed significantly better than comparison groups on reading tests after a 12-week program.¹⁸

Theme: Additional benefits of using literacy kits include boosting parent interest and involvement and promoting community engagement in children's reading acquisition.

- Using classroom traveling book kits has been linked to keeping parents engaged in their children's learning throughout the school year.^{4, 14, 19, 23}
- Parents reported home literacy kits from schools promoted more parent-child reading at home with PK students. Additionally, parents reported learning more about children's literature options.²
- Partnering with libraries can provide opportunities for parents to learn how to interact with their children through books. For example, attending story time can model effective ways to read books to children.⁵ Participation in book clubs can inform families of literacy resources.
- Library book clubs for elementary students can incorporate reading instruction to be more effective. Students in an intervention group that paired instructional techniques on effective reading practices with the book club books improved reading comprehension compared to a control group that only read the books.¹⁵



Home Literacy Kits

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Foreign Language Expansion

Prepared by the Department of Research & Performance Management

Foreign Language Expansion

April 2022

Author: Marie A. Sell, Ph.D.

Strategy

Memphis-Shelby County Schools will expand its Foreign Language offerings in an effort to increase the number of students who speak two languages and who are linguistically and culturally competent.

Foreign Language Instructional Models

In K–12 education, foreign language instruction usually follows one of two models.² Students either spend a specified amount of time each week learning a language as a taught subject (e.g., 30 minutes of language instruction per week in elementary school, one class period per day in middle or high school) or they experience language immersion instruction in which the target language is used the entire day, including for academic instruction. Some language immersion programs are dual language immersion which usually serve students whose primary language is one of the two target languages. Generally, in dual immersion programs, each target language is used equally throughout the day.

Both models are effective as a means of language instruction, although initially there were questions about whether immersion programs would be confusing or hinder language development in the primary language for young students. A review¹⁰ by the University of Oxford, however, covers copious amounts of research demonstrating this to be not true. While research has found that although elementary students in English immersion programs might initially demonstrated lags in certain language skills such as spelling, word knowledge, and word discrimination among others, the lags generally resolved within a year or two of language exposure and did not recur. Further, some research has found that students in dual language immersion programs appeared to have an edge, demonstrating higher GPAs and more post-secondary enrollments compared to students in other program types.¹¹

Traditional classroom instruction is an effective model of foreign language instruction as well. To be most effective however, classroom interactions and instruction should be conducted in the target language at least 90% of the time to maximize students' exposure to the target language. Further, use of the target language should be purposeful and have complexity just above the students' level of competence to facilitate target language acquisition and proficiency.³

² This literature review does not focus on ESL instruction as part of its content, however some of the research reviewed may include ESL instruction as a factor. While English Learner students are learning a foreign language, the topic of ESL instruction and supports was covered in a separate literature review.



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Best Practices in Foreign Language Instruction

An extensive literature review by the University of Oxford¹⁰ on foreign language instruction published in 2020 examined numerous studies that focused on the best ways to teach target language vocabulary and grammar for students in Pre-K through grade 12.

Research on vocabulary acquisition found:

- For nouns, there was no difference between explicit teaching (e.g., using word lists) and learning vocabulary in context (e.g., reading texts, engaging in conversation), however vocabulary in context was better for acquisition of adjectives.
- Strategically switching into students' primary language to provide lexical information led to better vocabulary gains than using the target language only.
- Pre-teaching vocabulary prior to using it in context led to higher later vocabulary use compared to no pre-teaching.
- Pre-training on the phonological patterns connected to the vocabulary being taught led to higher vocabulary acquisition compared to both pre-training on the vocabulary meaning and no pre-training.
- The use of games and activities on vocabulary acquisition was greatest when the games required high involvement (i.e., the task required learners to need, search for, and evaluate the meaning of a word).
- Using television or videos worked better when viewing the video was accompanied by teacher interaction compared to no teacher interaction (grades PK–K), accompanied by full captions/subtitles compared to key word captions only or no captions (middle school), and accompanied by pre-teaching target vocabulary compared to no pre-teaching (middle/high school).

Research on grammar acquisition found:

- Explicit grammar instruction resulted in more gains of grammar knowledge than did using an implicit approach in which students learned grammatical forms solely through reading texts and engaging in other language activities, although these findings shift according to students' level of proficiency with the target language. More advanced students benefit more from explicit instruction. Further, explicit instruction can hamper progress for students who are new to the target language.
- Literacy-based instruction compared to predominately oral instruction led to slightly better acquisition of grammatical structure knowledge.
- Both traditional grammar translation and communicative instruction increased grammatical knowledge, but only communicative instruction produced gains in the use of grammatical forms in oral language.
- There is limited high-quality research on the role of technology. One study found that using an online workbook that provided immediate, scaffolded feedback to students resulted in better grammar acquisition than using written workbooks.
- **Overwhelmingly, however, teacher competence and confidence in the target language, amount of practice time, and amount of exposure to the target language were the dominant factors impacting gains in grammatical knowledge.**



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Also included in the University of Oxford literature review¹⁰ was a synthesis of the research on reading, writing, speaking, and listening in the target language. There are several interesting individual findings from research that examined a specific aspect of one of these language domains. However, some general themes emerged that were common across the domains.

- Most effective instruction included at least some explicit instruction. For example, reading instruction that included explicit instruction in both lower-level and higher-level reading skills were more effective than those without.
- Teaching strategies related to the specific domain helped develop proficiency in the domain (e.g., teaching reading strategies improved reading comprehension, writing strategies improved writing performance).
- Ample practice improves skills (e.g., task repetition aids in correct pronunciation in spoken language).
- Technology designed to facilitate these domains of language acquisition require adequate teacher support to be effective, especially for students with limited technological skill.

Outcomes of Foreign Language Instruction

Outcomes of foreign language study can fall into two areas. First is the question of how much foreign language is acquired after a specified period of study. For example, how competent or proficient is a typical student in the target language after one year of high school instruction? The second question looks at how studying a foreign language can impact other areas, either academic or non-academic.

Acquisition of Target Language

There is limited research about how much of a target language is acquired by K-12 students over a specific period of time. One study⁹ examined a program providing 1-hour-per-week language instruction for 7- and 8-year-old students over the course of the school year (38 hours total). The program predominately provided oral language instruction and used role-play, stories, songs, and crafts to introduce students to the target language. Post-test measures revealed that students made gains in an elicited imitation test, but not in vocabulary knowledge. The authors concluded that 1-hour-per-week was insufficient for elementary students to acquire language proficiency. Another study by the Center for Applied Second Language Studies (CASLS)⁸ concluded that time (total time of instruction by the program) and intensity (number of sessions per week and weeks per year) were the two most important factors in determining proficiency outcomes for K-8 students.

A second study conducted by the Center for Applied Second Language Studies⁷ examined the proficiency level of high school students who studied Spanish or French for up to four years. Student data from 56 school districts across 21 states were included in the analyses. Proficiency was determined by analyzing student performance on the STAMP (STANDards-based Measurement of Proficiency) Language Proficiency test (<https://avantassessment.com/stamp#>) which assesses students' second language proficiency according to the ACTFL proficiency levels.² The American Council on the Teaching



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of Foreign Languages (ACTFL) is an international organization that supports the teaching of foreign languages (www.actfl.org).

The ACTFL guidelines provide 11 levels of proficiency including Novice, Intermediate, Advanced, Superior, and Distinguished. The Novice, Intermediate, and Advanced levels are further subdivided into low, mid, and high levels of proficiency. Study findings revealed that student scores predominately fell between Novice-low and Intermediate-mid levels. Further, after 720 hours of study (1 hour per day, 180 school days per year for four years), the majority of students remained at the Novice levels for speaking, with only approximately 15% of students achieving Intermediate-mid level proficiency in reading and writing.

The authors of this limited body of research generally conclude that educators, parents, and the community at-large tend to overestimate the amount of target language high school students acquire as it relates to actual target language proficiency. However, while the researchers caution not to have too high of expectations related to proficiency, they see definite benefits from K-12 students studying foreign language.

Impact of Foreign Language Learning on Other Areas

Although proficiency in the target language may take longer than time allows, there are still several benefits for students who study a second language in K-12. The research around these findings is generally grouped into three areas: academic benefits, other cognitive benefits, and increased social or cultural awareness.

Academic Benefits

Since the 1960s numerous studies have examined the impact of foreign language learning on students' performance in other academic subjects. Two annotated bibliographies^{4,5} provide detailed overviews of this research. Some highlights of the findings are listed here.

- Studying a second language helps students achieve in their first language, including in vocabulary, reading comprehension, language mechanics, language expression, and language arts skills. Additionally, students studying a second language have scored higher on standardized tests than students in the control group (no second language instruction).
- Studying a second language increases linguistic awareness and creates a better meta-understanding of language.
- Studying a second language increases performance in other core subjects (math, science, and social studies) on standardized tests.
- Studying a second language narrows achievement gaps for children of color and economically disadvantaged students, regardless of language skills in their native language. Some of these findings were particularly noted for elementary students.

Other Cognitive Benefits

Foreign language study has been linked to increases in cognitive functioning, divergent thinking, problem solving, abstract thinking, and performance on intelligence tests such as the Wechsler Intelligence Scale for Children (WISC).



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Social and Cultural Awareness

K-12 students who study a second language have more positive attitudes about speakers of the target language and their culture compared to students not exposed through second language study. In addition, another literature review⁶ noted that students studying a second language tended to be more empathic, have better perspective-taking skill, and better communication skills compared to students not studying a second language.



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English as a Second Language Support Prepared by the Department of Research & Performance Management

English as a Second Language Support

April 2022

Author: Marie A. Sell, Ph.D.

Strategy

Memphis-Shelby County Schools will expand its English as a Second Language (ESL) supports in efforts to improve academic grade level performance and English proficiency for English learners (ELs), and to expand the District's ability to communicate effectively with parents of EL students resulting in improved parent engagement and participation at schools.

Improving Academic Grade Level Performance and English Proficiency

Effective ESL Instructional Models and Supports

While several models of K-12 ESL instruction exist, the service models used in a specific school district can vary and may depend on state or local guidance. In Tennessee, approved service models for ESL instruction include: 4, 10, 16

- ESL pull-out programs, where students spend part of the day in a mainstream classroom and are pulled out part of the day for ESL instruction
- Push-in models, in which a classroom teacher and an ESL teacher co-teach within the classroom
- Sheltered content classes, where EL students are taught academic content in English that is adapted to their proficiency level
- Structure immersion grades/classes, where students are in English only classes with no explicit ESL instruction, however teachers might use the students' primary language to clarify English instruction
- Scheduled ESL class periods

Research has identified instructional strategies and supports that can be implemented within a number of different ESL instructional models that support academic outcomes and/or English language proficiency of ELs.^{5, 13, 14, 15, 17, 20, 21}

- Integrate instruction of rigorous grade-level academic content and academic content language/vocabulary along with English language development (ELD) instruction. Instruction should include regular, structured opportunities for small group/student pair discussions and for developing written language skills.
- Provide content instruction in ELs' primary language as needed.
- Include explicit instruction for vocabulary development and reading comprehension strategies in addition to foundational skills instruction.
- Use small-group instruction to support literacy and ELD for EL students needing more support (particularly in K-5).
- Screen and identify ELs who need academic intervention beyond Tier 1 instruction.

Newcomer ELs often need additional supports to help them adapt and be successful in the school environment. Further, some immigrant students may arrive with limited or no formal



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education experience and/or no familiarity with written language (even in their primary language). This can create additional challenges for older newcomer or immigrant ELs, in particular, who must learn the school environment, foundational print language skills, and English language, all while learning academic content. In addition to the points listed above, newcomer ELs can benefit from:^{17, 21}

- Instructional scaffolding that allows newcomer ELs to learn grade-level content, especially when their English skills are below their grade level.
- Linking new content with students' prior knowledge.
- Dynamic expectations for engagement and expression that change as students learn English.
- Purposeful student groupings that vary and at times include students with similar or different English language/literacy skills.

Impact of ESL Instruction and Best Practices for Implementing Instructional Models and Supports

Research on the impact of ESL instruction is limited and generally focuses on how long it takes for students to become proficient in English for the purpose of moving students out of ESL services. The most noted study⁹ in this area examined data from four school districts, two in California and two in Canada. The authors found that it takes three to five years for EL students to become proficient in oral language and four to seven years to become proficient in academic language.

Additional data reviews found that the rate of English acquisition varied across students^{7, 22} and that students often did not achieve at expected rates.^{7, 8} Factors affecting how long it takes students to be reclassified as English proficient include demographic variables^{3, 6, 18, 19} (sex, grade level), priority group membership^{6, 19} (eligible for free/reduce-priced lunch, students with disabilities), amount of formal education in the primary language,¹¹ initial level of English proficiency,¹⁹ the student's primary language,¹⁸ and the ESL instructional model being used.^{19, 22} Further, limiting access to appropriate level of ESL services prematurely can have long-term detrimental impacts on student progress.¹¹

Despite limited research on the impact of ESL instruction, several recommendations of best practices for implementing ESL instructional models and support have been made. These include:

- Create integrated classes with non-EL and EL students learning together in a bilingual or dual language instruction model are ideal to support ELs in school.
- The use of strategic supports (e.g., multilanguage word walls, cognate charts, collaborative activities in reading and writing groups) in ELs' primary language(s) benefit ELs at all grade levels.
- Provide multiple opportunities for practice and review in different formats (e.g., class group assignments, class individual assignments, instructional conversations, homework assignments).
- Differentiate instruction for individual students to meet them at their level. ELs should not be considered a homogeneous group, even if they speak the same primary language.



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- Provide ESL instruction that is culturally responsive and do not discourage the students' use of their primary language(s), especially when they are communicating with peers who share their primary language.
- Support the social-emotional needs of newcomer ELs with classroom and school strategies that create a welcoming environment, build rapport, emphasize strengths, and provide encouragement. Newcomer and immigrant students and their families face stressors that can include trauma experienced in their home country, resettlement, acculturation, and isolation.¹⁷

Improving ESL Parent Engagement and Participation at School

MSCS proposes to expand translation services and hire additional bi/multilingual personnel to assist with their communication with parents of EL students. Below are some best practices for successfully engaging parents.^{1, 2, 12}

- Communication should be two-way (i.e., can be initiated by either school staff or the parent) and should be formal, consistent, and reliable. If possible, communicate with parents in their home language.
- Avoid relying on students, relatives, or friends to translate between teachers and parents, especially if the information is sensitive or confidential.
- As with EL students, provide parents with a welcoming, culturally responsive environment in their interactions with the school and its staff.
- Offer information on resources that can help their student succeed (e.g., homework help, tutoring, study groups).
- Create an adult resource center at the school with information on the community and helpful community resources that EL, newcomer, or immigrant families might need.
- Create a family mentor program to help link new EL families with existing EL families in the community to assist new families with acclimating to the school environment.



English as a Second Language Support

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Arts Expansion

Prepared by the Department of Research & Performance Management

Arts Expansion

April 2022

Author: Shelby G. Roberts, Ph.D.

Key Findings

- Successful expansion builds teacher capacity through professional development and networking with national arts organizations.
- Schools should partner with their local arts community and work to seek eternal funding to support their programs.
- Students from historically underrepresented groups often benefit the most from arts education programs.
- Other large K–12 Districts have seen positive student outcomes after expanding their arts programs.
- Students who participate in the arts gain socio-emotional benefits and are more engaged and connected with their school.

Arts Education

Arts education is curriculum and instruction designed to deepen students' creativity, expression, cultural awareness, strengthen their artistic ability, and foster an appreciation for the fine arts (including, but not limited to visual, performing, media, and music).¹ The American public is in favor of arts education in schools and 88% believe that it is an essential component of a well-rounded education.² Over the last three decades access to arts education has declined primarily as result of the focus on test-based accountability measures in schools.^{3, 4} Schools are now shifting to focus on this important area and some are already seeing the whole-student benefits of arts participation in their schools and communities.

Best Practices in Implementation

Supporting Arts Educators

Teachers are the backbone of any educational program and their importance in sustained arts education cannot be minimized. Districts should focus on building capacity and continually developing their current roster of arts educators. Art teachers are often isolated in their school building as the sole arts provider at their location.⁵ Making sure that art teachers can engage with other art educators is essential and should not be limited to the district-network. Districts should facilitate professional development and networking and emphasize discipline specific national networks like the Institute for Teachers of Color and National Honor Society for Dance Arts.^{6, 7, 8}

Partnerships with the Local Arts Community

The local arts community can provide a rich source of knowledge and resources for arts educators and districts. "The most successful programs tend to take the form of a coalition that links cultural organizations and artists to local schools with oversight provided by a board that includes school and district officials, leaders of cultural institutions and



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organizations, government officials, philanthropists, and researchers.”⁹ Districts in Houston, Chicago, New Orleans, Boston, New York City, Seattle, Los Angeles, and Dallas all have thriving partnerships with their local arts community. The arts community can provide teaching-artists residencies, field trip locations, school arts events, afterschool programs, professional development, and grants.⁹

Alternative Funding

A primary constraint with any public educational program is securing funding. Arts have consistently seen cuts in funding over the last two decades. To make up for the lack of government funding many outside organizations have created grants to offset the costs for K–12 school. Utilizing different funding sources like ESSA’s Assistance for Arts Education Program, NEA’s Collective Impact Program in Arts Education, and other grant programs can help sustain expansion efforts. Successful programs in other districts have sought out alternative funding to meet the needs of their students.

Focus on Equity

Schools that primarily enroll students of color have disproportionately seen cuts in funding for the arts resulting in lower arts engagement for these students.¹⁰ These students along with other special populations though often see the most benefit from arts education programs. Adjudicated youth, students with disabilities, chronically absent students show more gains from arts programs than their peers.^{11, 12}

Other K–12 Districts

Very few districts collect arts education measures and there are not many rigorous methods or large data sets available for study.⁹ However, there are a handful of large districts who have made a concerted effort to expand their arts education programs and are already seeing the benefits of those programs.

Boston’s Art Expansion Initiative

Boston Public Schools launched a large-scale arts expansion program from 2009–12. They sought to expand direct arts instruction, build district- and school-capacity, and strength partnerships with the community. From 2009 to 2014 BPS showed a 20% gain for elementary and middle grades students receiving year-long weekly arts education with almost 90% of students enrolled each year.¹³ As a result they saw gains in attendance, engagement, and test scores.

Arts Connect Houston

Houston Independent School District works with Arts Connect to ensure “that every student, in every school has equitable access to a well-rounded education that includes the arts.”¹⁴ Their partnership helps prepare students for college and careers and supports students social-emotional learning through the arts. A recent study revealed that Houston ISD students who received arts education 1) achieved higher writing scores, 2) received fewer disciplinary infractions, 3) showed more empathy, 4) had higher engagement, and 5) aspired more for college.¹⁵



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Chicago Arts Partnerships in Education

Chicago's Arts Partnerships in Education (CAPE) allows one teacher and one teaching artists to collaborate to develop arts integrated curriculum for students. These partnerships allow for integration of “music, visual arts, dance, digital media, and drama into their academic lessons in order to improve academic and social-emotional outcomes such as creativity, critical thinking, problem solving and collaboration skills.”¹⁶ CAPE’s partnership with local educational researchers has allowed their district to conduct rigorous studies that show that academic benefits for their students and even greater gains for their economically disadvantaged populations.¹⁷

Outcomes

Numerous student outcomes are evident when children participate in the arts. In research, the outcomes studied are normally the arts’ impact on social-emotional learning (SEL), processing ability, art learning and engagement, school engagement, and academic achievement. Generally, arts education across the board shows positive student outcomes in all these areas.¹ Students are not the only ones who benefit from arts education though, adults and their communities see many positive benefits as well.¹⁸

Student Outcomes

SEL

“Exposure to arts opportunities allows students and teachers to engage with one another in a way that often stands in contrast to how they engage with each other in the context of regular academic instruction and that provides rich opportunities for social-emotional learning.”¹⁹

- The arts support the development of:
 - Self-awareness²⁰
 - Self-management²⁰
 - Social/cultural awareness²⁰
 - Relationship skills²⁰
 - Self-concept²¹
 - Decision making²⁰
 - Emotional competence²²

Academic

Research has produced mixed results when it comes to the impact of art on academic outcomes.

- Music education, specifically music composition courses, can improve arithmetic skills.²³
- A meta-analysis on classroom drama found positive outcomes for story understanding, writing, reading readiness and achievement, and oral language development.²⁴
- One meta-analysis did not find significant casual relationships between arts education and wider academic outcomes.²⁵



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Engagement

- Boston public schools found significant, consistent, positive effects on attendance. Students' attendance increased by 1/3 of a day and a full day for chronically absent students taking art courses compared to other students after all other influences were controlled.²⁶
- A review of the ADD Health data set found that for each year enrolled in art, there was a 20% reduction in the likelihood of suspension.¹⁸
- Students who participate in the arts are less likely to engage in delinquent behavior or use drugs and alcohol.¹⁸
- Students also report high level of interest in taking more art during school and having access to a variety of art forms such as dance, theater, visual arts.²⁶

Community Outcomes

“Arts education can also lead to socially empowered and civically engaged youth and adults.”²⁷

Research has found that later as adults, students who participated in arts in schools were more likely to have earned a college degree and that for each additional year of arts coursework, their odds increased by 12%.¹⁸ Adults with art experience were generally more optimistic than non-arts peers. Adults with art experiences as youth are less likely to engage with illegal substances (i.e., drugs) and less likely to be involved with the criminal justice system as adults.¹⁸

Conclusion

Overall, arts education can benefit students not just academically, but as a whole person. Developing creativity, connecting and understanding other cultures, problem-solving, and increased attendance and engagement all stem from students engaging with the art in schools. While funding is often a challenge, collaborations with the local arts community, focusing on equity, and building teacher capacity can make expanding the arts possible. Other large districts have created successful arts expansion programs and can provide robust examples of what works and help avoid areas of challenge.



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Online Learning & Virtual Schools

Prepared by the Department of Research & Performance Management

Online Learning and Virtual Schools

April 2022

Author: Hannah Pallotta

Strategy

Memphis-Shelby County Schools (MSCS) received Elementary and Secondary School Emergency Relief (ESSER) funds which aim to address the ongoing impacts that the Covid-19 pandemic has on K–12 education. A portion was allocated to online learning and virtual schooling. MSCS wants to increase the number of enrollments in advanced online coursework for courses not physically offered at the schools in which students attend; this is intended for small population of students in grades 4–12. This will help expand student access to a diverse selection of course offerings, allowing students to learn at their own pace and earn Early Postsecondary Opportunities (EPSOs) that are needed for graduation.

Key Findings

- Students who do well in online learning are motivated and self-regulate
- Teachers can help students self-evaluate by using the Formative Feedback Loop
- Established standards and goals and open communication are key to successful online learning spaces

Learning Online—Successful Student Learners

Students who are successful in online learning often:

- Are motivated and self-regulate.
 - “Self-regulated learning refers to the process by which students set learning goals and monitor the cognitive strategies, emotional strategies, and specific actions they use to achieve goals.”¹
 - Students use the following self-regulation strategies:
 - Set goals
 - Make plans to achieve said goals
 - Self-evaluate
 - Give self-consequences
 - Keep records/Monitor progress
 - Seek information and assistance²
- Have the following characteristics: good time management, effective communication, independent study habits, self-motivation, academic readiness, and technological preparedness.³
- Have foundational academic and technological skills.³
- Are older students.
 - Student demographics do not determine if a student is successful in an online space, but older students often outperform younger students.³
- Actively engage in online activities and discussions.



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“Research also finds positive effects of self-evaluation in online learning environments...Students who participate in self-reflection activities earn higher final course grades, although the strength of this association decreases at higher grade levels.”¹

Best Practices for Teaching Online⁴

- Create teaching presence early in the course by showing your personality, posting announcements, appear on video; continue throughout the course.
- Provide clear expectations with a detailed syllabus, due dates, and assignment directions.
- Provide timely feedback.
- Give students opportunities to interact with other students, with discussions or group work.
- Make real world connections to show students how they would apply what they are learning.
- Help students navigate the online course space by setting expectations around participation and netiquette and by providing technical support or information when needed.

Teachers can help students in both of areas (self-regulation and motivation) by:

- Ensuring peer collaboration and supports by building community in the digital classroom
 - Encourage students to work together and provide clear expectations for group work
 - Create opportunities for students to talk with the instructor and one another
- Encouraging emotional self-regulation
 - Use and teach students to use reflective questions to identify emotions and ways to respond to those emotions
- Connecting instruction to students’ interests
- Regularly checking in with students on their progress and grades and reminding, praising, and encouraging students to stay the course when necessary
- “The American Psychological Association recommends that teachers provide student with an age-appropriate degree of choice in learning activities to support motivation and develop self-regulation skills. Research finds that choice in learning activities develops intrinsic motivation and self-efficacy in students across grade levels.”²

Teachers can support self-assessment in students by using the “Formative Feedback Loop”¹:

- Developing success criteria with students
- Modeling how the criteria will be applied to work
- Letting students apply criteria to their own work
- Discussing with students how well they are assessing their own learning
- Helping students use feedback to develop individual learning goals and clarifying next steps in their learning¹



Online Learning & Virtual Schools

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ACT Preparation – Peer Power

Prepared by the Department of Research & Performance Management

College Readiness/ACT Preparation

April 2022

Author: Ashton Toone

Key Findings

- Students benefit both academically and socially from the experience of having a peer mentor.
- Peer mentoring has been proven to be positively associated with positive academic gains.
- Overall, research suggests that pretest intervention is associated with an increase in standardized testing scores.

Peer Power Program Overview

Peer Power is a non-profit organization that employs high-performing college students to serve as tutors and mentors to high school students in public schools. These college students are known as success coaches that work in classroom settings. Peer Power is currently situated in the following schools in Memphis-Shelby County Schools: Central High School, Cordova High School, Douglass High School, East High School, Hamilton High School, Kingsbury High School, Melrose High School, Ridgeway High School, and Whitehaven High School. Peer Power has two focuses with MSCS students. One focus is offering ACT prep courses for high school students at participating schools, and the other is providing general mentoring and assistance to students.

Peer Learning

Peer Power relies on the process of peer learning through the lens of a near-peer intervention model. Peer learning has been proven to be successful in increasing students' academic gains. It provides an opportunity for students to learn from each other and take an active role in their learning experience.⁴ There are three main types of peer tutoring: (1) Reciprocal Peer Tutoring (RPT), (2) Class-Wide Peer Tutoring (CWPT), and (3) Cross-Age Peer Tutoring. (Ali et al., 2015).

- Reciprocal Peer Tutoring: peers learn from each other by alternating between tutor and learner roles
- Class-wide peer tutoring: whole class is broken down into small groups and groups learn from each other
- Cross-Age peer tutoring: elder students with more academic experience tutor younger students

Peer Power primarily employs the Cross-Age Peer Tutoring approach using the Near-Peer mentor model. Near-peer mentoring occurs when a mentor is close to the social, professional or age level of the mentee.⁷

Ali and colleagues noted that there are several benefits of peer tutoring such as students are empowered to be active participants in their learning, additional individualized time



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spent on classroom content, and the development of interpersonal skills among both tutors and learners.² Those same benefits appear in the near-peer mentoring model.

Test Preparation

A primary component of the Peer Power program is ACT Prep University where students receive preparation and coaching for the ACT test. Previously, the effects of test preparation on students' test scores showed mixed results and moderate positive effects.⁵ A 2015 study examined the relationship between SAT score gains and factors of test preparation sessions.³ They found that time spent on individual tutoring was positively associated with an increase in the total SAT score - each hour spent on tutoring increased the final SAT score by 2.34 points. They also found that the time spent preparing was positively associated with score gains.

There was a similar trend found in research done on the ACT test. Schiel and Valiga found that students who prepared for and took the ACT for a second time gained an average of 1.4 points on their composite score.⁶ Additionally, ACT found that longer-term interventions such as consistent coursework were associated with increases of 2.5 to 5.8 points in ACT Composite score.¹ Moore, Sanchez, and San Pedro also found that test preparation was equally effective for students of multiple marginalized identities (i.e., sex, race, household income).⁵

There is additional evidence that suggests that intervention in the form of a test preparation course could result in positive general academic achievement gains. What Works Clearinghouse found a statistically significant positive effects on students' general academic achievement after participating in test preparation courses, citing three studies that compared students who received treatment versus students who did not prior to taking or re-taking a standardized test.⁸

Conclusion

Overall, students can benefit from any type of standardized testing intervention. Not only could the intervention improve composite scores, but it can also contribute to greater classroom academic gains. Additionally, the individualized peer tutoring and mentoring that Peer Power provides can be invaluable to students as they are preparing for the ACT and post-secondary opportunities as it combines both academic and social reinforcements.



ACT Preparation – Peer Power

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Advanced Placement (AP) Course Expansion Prepared by the Department of Research & Performance Management

AP Course Expansion

May 2021

Author: Anne Walton Garrison

Strategy

Launch AP Academy, a centralized virtual delivery method for Advanced Placement (AP) courses so that students at schools with few or no onsite AP offerings can have access to AP courses.

Key Findings

- Despite AP's dramatic expansion since its inception and despite ongoing efforts to increase AP participation among disadvantaged groups, racial/ethnic and economic participation gaps persist. Intentional expansion of AP offerings in schools that serve disadvantaged populations has not brought about equitable AP participation, as privileged groups have used their resources and status to increase their own AP access and participation, thus maintaining their competitive advantage in college preparation and admissions.
- Most research on AP effectiveness is fatally flawed, in that it cannot establish whether differences in outcomes between AP and non-AP participants are program effects or selection effects. However, one well-designed study indicated a causal link between learning enough in an AP course to pass the AP exam and subsequently scoring higher on the ACT. Merely taking an AP course, however, showed no benefit for ACT performance.
- Two large-scale studies comparing the effectiveness of online versus in-person AP participation yielded opposite results, with one showing that online participants outperformed in-person participants, and the other showing the reverse. The former study contained no control variables, however, while the latter controlled for demographics and prior achievement. (Neither study was designed to establish causation.)

Introduction

The College Board's AP program has an established reputation for academic rigor, and AP participation in high school can work to students' advantage in college admissions and scholarship decisions and can even count for college credit. Given these factors, educators, education scholars, policymakers, and the College Board itself have turned their attention to democratizing AP access and expanding AP participation to underrepresented groups as a means to bridge persistent racial/ethnic and economic achievement gaps and to increase college readiness, college enrollment, and college persistence among historically marginalized populations.

A school's ability to offer AP coursework depends on a variety of factors. Small schools in particular struggle to offer AP courses, because the student population may not be big enough to support multiple levels of coursework in the same subject within a given grade level (e.g., regular, honors, and AP English). Beyond school size, other factors include having



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enough teachers trained to teach AP courses and having enough students interested in taking them.

Technology has introduced a way around these dilemmas, enabling students to take AP courses online regardless of whether their school has both the staff and student body to make offering a given AP course onsite feasible. The development of online instruction has opened up the landscape of AP coursework to populations that have not traditionally had access to it. From rural schools to understaffed/underfunded urban schools to small schools of any stripe, expanded access to AP can now be achieved without juggling limited resources and making difficult tradeoffs. As policymakers seek to increase AP equity through online course offerings, it would be helpful to consider studies examining the effectiveness of this strategy.

Overview of the Literature

Unfortunately, the scholarly literature does not contain many high-quality, independent studies focused specifically on the effectiveness of and/or best practices for broad-access online AP courses. For the most part, the literature pertinent to this topic requires surveying scholarship from three areas of inquiry: effectiveness of the AP program, effectiveness of online instruction, and access to AP courses. Some studies may bridge two of the three subject areas, but studies considering all three in tandem are scant. Thus, this literature review considers studies from all three areas, with priority given to studies that treat at least two of the three topics together.

Tension Between AP Access and Effectiveness

In a recent review¹ of the AP literature entitled “Advanced Placement: The Dual Challenge of Equal Access and Effectiveness” Kolluri (2018) explored the tension between the somewhat competing goals of expanding AP access and maintaining AP’s academic rigor. The author noted that while AP was once the province of elite students at elite schools, participation in AP has grown steadily since its inception. However, the rise in AP participation has been accompanied by a decline in AP exam scores and a weakening of the association between AP participation and success outcomes, leading many scholars to conclude that many students now taking AP are underprepared, and as such, they are not set up to benefit from the instruction.

Kolluri pointed out, however, that of the many quantitative studies included in his literature review, only one² employed a quasi-experimental design; the rest were correlational and thus could not establish causation. The extant studies on AP effectiveness thus may not have successfully ruled out the influence of student-level and school-level characteristics that affect both AP participation and outcomes such as AP exam performance and college success.

Indeed, the methodological shortcomings of research on AP effectiveness was a focal point in another review of the literature³ published around the same time. Warne (2017) noted that earlier studies simply compared AP students to non-AP students while controlling for few or no confounding variables. Later studies have tended to control for many more student-



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and school-level variables that would affect both AP participation and outcomes, resulting in much weaker associations than had been found in the studies that lacked such controls.

Warne also pointed out that merely controlling for confounding variables does not indicate a causal impact of AP on college success or other desired outcomes, noting that only a randomized control trial could do so conclusively, and that none had ever been implemented for the AP program. Thus, the question remains as to whether the somewhat better college outcomes observed among AP participants is attributable to their AP experience or to other factors such as economic, social, and cultural capital; school quality; or academic preparedness unrelated to AP coursework (to name a few).

That said, one strong quasi-experimental study⁴ examined AP's impact on ACT scores using propensity score analysis with marginal mean weighting to match four groups of students (non-AP students, AP exam nonparticipants, AP exam non-passers, and AP exam passers) on a wide variety of demographic and academic variables. The study found little benefit to merely enrolling in an AP course. However, students who took and passed the AP exam did obtain higher ACT scores than their rigorously matched counterparts, suggesting a causal link between learning enough in an AP course to pass the AP exam and subsequently scoring higher on the ACT.

Moving back to the issue of expanding access to AP, Kolluri's (2018) literature review emphasized that racial, ethnic, and class inequities in AP access and participation still persist, despite the massive growth in AP that has taken place over the decades. Underscoring this point, a large-scale study⁵ of AP participation in California found that as the state attempted to expand AP access,

California's intervention resulted in increased AP subject offerings and enrollments in high schools serving disadvantaged and less advantaged students, but these reductions in deprivation had trivial effects on inequalities, since schools serving advantaged students increased their own AP offerings and enrollments. In addition, high schools serving White and Asian students had larger increases in AP offerings and enrollments than high schools serving Black and Hispanic students (p. 1).

In a similar vein, Schneider (2009) compiled a history of AP access and participation⁶ that highlighted the "difficulty of combating inequality with school reform, particularly in light of continuing moves by privileged groups to gain a measure of distinction" (p. 813). A subsequent study⁷ demonstrated this phenomenon, finding that high schools' programmatic and non-programmatic resources influenced college outcomes and mediated the effect of socioeconomic status on college choices. The author concluded that:

... the fragmented secondary school system in the United States is an avenue for affluent parents to seek relative advantages for their children in terms of reportable marks of distinction (namely AP course-taking and high SAT scores) and also in terms of social influences that lead to successful applications to selective colleges.



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Inequalities between schools substantially explain inequalities in college destinations based on family socioeconomic status (p. 803).

A study examining unfulfilled AP potential⁸ found that most students demonstrating AP potential did not fulfill it, and this was especially the case for students of color and economically disadvantaged students. Moreover, the study “did not find support for many of the student-centered reasons for forgoing AP, such as lack of motivation and constraints on time due to work or extra-curricular activities” (p. 1).

Another study⁹ examined Black-White gaps in AP participation within racially diverse schools and “found that an additional AP course increased the Black-White AP gap in schools by 1.1 percentage points, net of other variables” (p. 642), indicating that expanding AP course offerings alone does not bring about equitable AP participation.

While access to AP has expanded dramatically over the years, the above overview underscores how persistent AP participation gaps can be, even in response to policies specifically designed to close them. Will the expansion of online AP programs help move the needle in ways that other policies have not?

Online AP Programs

New York state’s Virtual Advanced Placement (VAP) program aimed “to increase access to AP courses for students who would have otherwise been underrepresented in AP programs” (p. 40)¹⁰. An evaluation¹⁰ of the program found that the percentage of Black students in VAP was very similar to the percentage of Black students in the state, but the proportion of Latinx students in VAP lagged their proportion within the state population. Economically disadvantaged students, English language learners, and students with disabilities all had much lower VAP participation than their respective proportions within the state would indicate. Thus, while the VAP program helped Black students reach parity, it did not do the same for other marginalized groups.

A case-study evaluation¹¹ of an online pilot program designed to expand AP opportunities at a large urban high school in Ohio revealed an attrition rate of nearly 62%. The evaluator cited the following as being detrimental to the program: insufficient time to plan the pilot rollout; lack of support for students; and poor communication among the virtual vendor representatives, the virtual teacher, the program administrator, the program mentor, and the participating students.

As to the effectiveness of large-scale efforts to expand AP access via online course offerings, a survey of the literature yielded two studies that compared outcomes for students in the online program to those receiving in-person AP instruction. One of these studies¹² looked at Florida Virtual School (FVS), comparing FVS students’ AP exam performance to that of non-FVS students (i.e., to students in site-based AP courses). The FVS students outperformed the non-FVS students, but given that no control variables were employed, one cannot conclude that the differences were program effects rather than selection effects.



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The other study¹³ considered AP courses offered through Virginia Virtual (VVA). Here is a summary of the findings:

After controlling for demographic and prior achievement differences, students in face-to-face courses were more likely to score higher and demonstrate proficiency on SOL [state-administered achievement tests] and AP exams than students taking the same courses through VVA across most subject areas. Because the study design was correlational, additional research is needed to determine whether the difference in performance is due to the characteristics of the students in online courses, aspects of the VVA program itself, or some other factor such as students' reasons for enrolling in the course or the supports available in their local schools (p. 1).

As for research focusing on the implementation of online AP, one study¹⁴ examined the role of the facilitator in the teacher-facilitator model of online instruction. In this model, an online teacher delivers instruction virtually while a facilitator is onsite to help troubleshoot technical problems, proctor exams, monitor student progress, and provide a supportive learning environment for students. One emergent theme from this qualitative study was the perception among facilitators that teacher-student interactions could be improved. Another theme was the inadvertent overlap that can develop between the roles of the online AP teacher and the onsite facilitator, such that facilitators sometimes find themselves delivering direct AP instruction, which is beyond their purview and their training.

Another qualitative study¹⁵ probed teachers' and students' perceptions about online interactions within a statewide Virtual Advanced Placement program. The study found that while teachers had a generally positive appraisal of the online interactions within their courses, students' perceptions were more mixed.



Advanced Placement (AP) Course Expansion

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AgriSTEM Program Expansion

Prepared by the Department of Research & Performance Management

AgriSTEM Program Expansion

April 2022

Author: Ashton Toone

Strategy

Memphis-Shelby County Schools will expand its Agriculture Program in an effort to enhance student preparedness for and access to post-secondary opportunities and improve the culture and climate of schools.

Key Findings

- Students who participate in Career and Technical Education (CTE) courses graduate high school and enter postsecondary programs or careers at higher rates than their peers.
- CTE programs within a school rather than a CTE-only school are more cost efficient for school districts.
- Research suggests that participation in CTE programs is associated with higher wages for students and an increased motivation to attend school.

Career and Technical Education Overview

In the state of Tennessee, career and technical education (CTE) is defined as the rigorous academic, technical, and employability skills or content that is taught through career-focused standards and courses designed to prepare learners for advanced education, training and employment in aligned occupations (TDOE, 2020). CTE is organized into the following major industry sectors: advanced manufacturing; agriculture, food, and natural resources; architecture and construction; arts, audio/visual technology, and communications; business management and administration; education and training; finance; government and public administration; health science; hospitality and tourism; human services; information technology; law, public safety, corrections, and security; marketing, distribution and logistics; STEM (science, technology, engineering, and mathematics); and transportation (TDOE, 2020). The skills acquired in CTE programs are intended to prepare students to enter postsecondary or career environments.

According to a study done by the Tennessee Higher Education Commission (2020), 42% of PK-12 students in Tennessee concentrate in a career and technical education program of study, and 72% of Tennessee students in CTE programs enrolled in advanced training or entered the workforce after graduation. In 2018, the Tennessee Department of Education reported that Agriculture, Food, & Natural Resources was the third most popular industry that students sought a concentration in.

Benefits of Career and Technical Education

There are many challenges that may arise in CTE expansion, but operating costs is one of the primary barriers to the success of CTE programs. CTE education often requires specialized equipment, facilities, and materials in order to operate at its optimal level. Additional barriers may include hiring adequately trained staff to lead agricultural programs



AgriSTEM Program Expansion

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of study. However, research suggests that having a CTE-focused school, rather than a CTE only school proves to be more cost efficient to the district and beneficial for students. Not only could CTE programs solve potential enrollment issues (i.e., under enrollment and overcrowding), but CTE can provide labor for the local workforce which would in turn strengthen the local economy (EAB, 2017).

CTE courses are also often structured as small learning communities which can prepare students for postsecondary programs and early career opportunities (EAB, 2019). While there is not much experimental and long-term data on students who participate in CTE programs, CTE program participation has been associated with higher wages for students in postsecondary and career and higher motivations to attend school more frequently (Kreisman & Stange, 2017). The U.S. Department of Education found that high school students who participated in CTE programs graduated high school at slightly higher rates than their peers and entered postsecondary programs at slightly higher rates than their peers (USDOE, 2017).

Agriculture CTE Programs

Agriculture-focused CTE programs, also known as school-based agricultural education (SBAEs), largely focus on topics of agriscience and agribusiness, but program pathways can vary from power and structural systems to veterinary science. Instruction in the agriculture pathway is comprised of three main components: (1) classroom/laboratory instruction, (2) supervised agricultural experience programs, and (3) student leadership through Future Farmers of America (FFA). In Tennessee, the following programs of study within agriculture are available:

- Agribusiness
- Agriculture, Engineering, Industrial, and Mechanical Systems
- Environmental and Natural Resource Management
- Food Science
- Horticulture Science
- Veterinary and Animal Science

Students are also able to receive credentials in both animal science and horticulture science.

Conclusion

Though the longitudinal effects of CTE are still being explored, data does suggest that participating in any CTE pathway can be beneficial to the student. And because the agricultural program is only being expanded in one school, challenges associated with staffing and budget are less likely to impact the success of the pathway's implementation.



AgriSTEM Program Expansion

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College, Career, & Technical Education: Coding

Prepared by the Department of Research & Performance Management

College, Career, & Technical Education: Coding

April 2022

Author: Patrick L. Shipp, Ph.D.

Strategy

Launch **Coding**, a language that programmers use to create video games, apps, websites and computer software, so that students have access to post-secondary opportunities and improve the culture and climate of schools.

Key Findings

- Since school districts and policymakers have embraced the idea that coding(computing) should be for everyone, coding education has been integrated into the educational system for students at a very early age.
- Coding provides students with the necessary skills to thrive in today's fast changing technological world as well as with other 21st century skills (problem-solving, collaboration, risk-taking, creativity, communications, computational fluency) that can lead to a career.
- Coding becomes more motivating and meaningful for students when they have opportunities to create their own projects and express their own ideas.
- Scratch and Python are the two most popular coding languages.

Introduction

Considered to be a 21st century skill, coding enhances problem solving, critical thinking, communication, collaboration, computational thinking, and innovative thinking skills.^{2, 10, 16, 18, 19} Coding offers a competitive advantage in the workplace and requires important technical skills.¹⁶ According to the Bureau of Labor Statistics, computing jobs are growing by over 20% every year, and there are roughly 1 million more computer-related jobs than people to fill them.¹ Fulfilling demand in this technology intensive field requires significantly expanding and broadening the trained computing workforce. Consequently, school systems and policymakers are now embracing the idea that computer science should be offered to everyone and should be regarded as a mainstream discipline.^{20, 22}

Coding Languages for K-12 Schools

Scratch and Python are two of the most popular coding languages in many curricula.⁷

Scratch

A growing number of schools around the world use Scratch, a free program, as a gateway to coding. Scratch is one of the new programming languages that has the advantage of eliminating complex syntax language. An age appropriate programming language, Scratch allows children to personalize the programs they create using the interface with music, colors, or stories. Scratch coding has been successfully utilized in subjects including mathematics, science, and arts.¹⁵ Currently, Scratch is being offered to students within MSCS.



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Python

While being one of the most popular languages for developers, Python is easy to read and makes a great programming language for beginners as well. Students learn coding fundamentals to give them a solid foundation for learning additional programming languages. A benefit for students is that Python can be used during their professional career.¹⁴ Currently, Python is not being offered as a course to students within MSCS.

Best Practices, Barriers, and Lessons Learned in Curriculum Implementation in K-12¹⁴

Introduce Computer Science Early

In elementary classes, students learn computing concepts and develop problem-solving abilities through practical activities involving art, languages, mathematics, science, and social studies. Younger students develop computational reasoning skills by resolving puzzles, sorting and organizing data, using virtual media to build and illustrate stories, plus developing games using drag-and-drop coding tools while learners in the higher elementary grades work together to build apps, explore professions and evaluate the social and moral issues of computing.¹³ Currently, MSCS is offering Scratch at several elementary schools.

- One study examining the effects of learning to code on different cognitive skills of elementary school-aged children found that the learn-to-code education program using Scratch coding significantly increased computational thinking scores from pre-test to post-test compared to the control group.¹⁷
- A study cited the need to include coding in the curriculum as early as primary education or sooner because code-literacy and computational thinking play an important role in K-12 STEM education. Students trained in computational thinking are significantly better prepared for the daily tasks and their future professional work.⁶
- Another study revealed that children who have lower levels of problem-solving skills before learning programming could benefit more from a visual programming language like Scratch compared to a traditional programming language like Python coding.¹⁵
- Although it is recommended that students begin programming as early as Kindergarten, successful implementation for young programmers at the K-5 level can be stymied by the lack of teachers, course offerings, and educational support.⁹

In middle school courses, students thrive when their classes are challenging, helpful and individually relevant. During these years, learners must comprehend computing instruments and networks, determine how computing promotes communication, and apply computational reasoning abilities to solve societal problems.¹³ Currently, MSCS is offering Scratch at several middle schools.

- Scratch coding is cited as a useful tool for coding in school settings and that its application has a positive effect on students' learning.^{3, 4, 10, 15} One research study found that students showed significantly more positive attitudes towards mathematics after Scratch-based activities, where they developed mathematical games.¹¹



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- Career exploration should provide middle school students with an awareness of post-secondary options, engage student thinking about the future, and help students make connections between future interests and academic choices and achievement.⁸

In high school, students need access to thorough, standards-based computing courses in varying settings, such as regular or local high schools, tech hubs, community and mechanical colleges, or instructor-facilitated online courses.¹³ Currently, sixteen MSCS high schools are offering Coding (Computer Science) courses aimed at preparing students for post-secondary credentials and careers. The courses include Computer Science Foundations, Coding I and II, Coding Practicum, Mobile App Development, AP Computer Science A, and AP Computer Science Principles. In fact, MSCS high school juniors and seniors who are prepared for advanced coursework can jump start their college career with dual enrollment and earn college credit for these same courses.

- High school students should go beyond a fundamental understanding of the operation of computers and explore more complex and interesting topics of computer science such as interface design, limits of computers, and societal and ethical issues of software engineering. These courses should also help students improve their problem-solving and programming skills in preparation for Advanced Placement Computer Science courses.²²
- Secondary students planning on entering the workforce, continuing their education in a post-secondary technical school, or entering a two-year college program should enroll in computer science courses leading to industry certification. Industry certification provides a standard that is useful to potential employers in evaluating a candidate who has no prior work experience. Students who complete certification courses should be encouraged to take the corresponding exam as proof of acquired knowledge.²²

Develop Curriculum that Represents Diverse Student Interests

In the design of curriculum to support coding and learning, one study recommends that students be assigned meaningful projects so that they experience the process of turning an initial idea into a creation that can be shared with others; that students be allowed to work on projects connected to their own interests so that they work longer and harder and learn more in the process; that students work in teams to encourage collaboration and sharing but learn to build on the work of others; and that students be allowed to take risks, try new things, and experiment playfully in an environment where they feel safe.²⁰

- Findings from a study conducted with 69 high school students using Scratch to design a computer game showed increases in motivation and interest in programming.¹²
- Another study on the effects of coding on learning English words found that Scratch was more effective compared to traditional teaching methods in creating a better learning environment, raising student motivation and in-class social interaction, and lessening teacher dominance.¹⁸
- When designing the coding curriculum, school districts should choose coding languages that require only content at or below target grade level and use drop-down



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menus to interface, whenever possible.⁵ Content standards for computer science education need to be developed and adopted in a way that parallels what has occurred in disciplines such as science, mathematics, and language arts.²² Additionally, curriculum materials should be linked to standards in different content areas.⁵

- Most teachers lack familiarity with coding resources as well as with the instructional basics to introduce their classrooms to coding. Additionally, most teachers expressed the feeling of loneliness and asked for a colleague to share teaching strategies, ideas, and resources.² An interdisciplinary team of computer scientists, educational researchers, and teachers should be created to bring together content knowledge, research on how students learn, and knowledge on how the curriculum will fit into the current norms and expectations in the classroom.⁵

Define Short-term Benefits and Learning Outcomes

- Coding teachers need to continually define goals and benefits for students to retain their interest. A place-based education approach, which immerses students in local heritage, culture, landscapes, opportunities and experiences, may be a successful strategy to define goals for students to serve their local communities through service-learning projects.²¹
- Job shadowing, on-site visits as well as interactions with employers and guest speakers can introduce students to a variety of computing careers, setting the stage for more opportunities like internships and apprenticeships.⁸



College, Career, & Technical Education: Coding

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Naviance

Prepared by the Department of Research & Performance Management

Naviance

April 2022

Author: Anne Walton Garrison

Strategy

Continue use of the Naviance platform and services for middle and high school students to develop robust career pathway opportunities.

Introduction

MSCS adopted Naviance in 2020–21. Naviance is an online platform designed to assist students with college and career readiness. It serves as a one-stop-shop for multiple types of information, including student information (e.g., college entrance exam scores, grade point average [GPA], individualized graduation plans), college information (e.g., admissions requirements, applications, financial aid forms), and a variety of assessments and questionnaires pertinent to the college selection and application process. School counselors and students can use Naviance to explore college and career options that match students' academic performance, interests, and goals. Students can also organize their college choices and applications as well as request transcripts and recommendation letters inside the platform. The District's current subscription includes all Naviance offerings except for AP and SAT test preparation and a feature for coordinating volunteer opportunities.

A thorough search of the scholarly literature using the term *Naviance* revealed that only four peer-reviewed studies of the platform have been conducted thus far. An overview of each of these studies, along with their recommendations, is presented in chronological order.

Naviance Use and College Application Rate¹

Study Synopsis

Noting high student-to-counselor ratios that prevent many school counselors from being able to give students as much one-on-one attention as they need, the authors of this study sought to learn whether the Naviance platform might fill in some of the gaps. The study aimed to find out whether college application rate was associated with the number of years students had access to Naviance and the number of times they accessed the platform each year.

The study focused on the first four cohorts of graduates who had access to Naviance: the first cohort were seniors during the first year of Naviance adoption, while the fourth cohort had access to Naviance for all four years of high school. The study found that college application rate was significantly associated with both the number of times students accessed Naviance (to a strong degree) and the length of time students had access to the platform (to a smaller degree), controlling for sex, socioeconomic status, and weighted GPA. It is worth noting that there was a strong correlation between students' length of access to Naviance and the average number of times they logged into Naviance each year, explained at least in part by the fact that counselors increasingly relied on more Naviance features over time. As with any program implementation, it took time for counselors to fully integrate



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Naviance into their work processes, and the increase over time in students' average annual logins reflected that.

While unable to establish a *causal* relationship between Naviance use and college application rate, the authors concluded that Naviance is an appropriate way for school counselors to promote college access.

Recommendations

The authors gave the following recommendations for Naviance implementation (pp. 40–41):

- Naviance should be a supplement for college counseling services already provided, not a replacement.
- Counselors should make Naviance available no later than the ninth grade.
- It is important for school counselors to make Naviance necessary for all students.
- School counselors should use Naviance to help students select rigorous coursework.
- Counselors need to involve all stakeholders in the implementation of Naviance.

School Counselors' Acceptance and Use of Naviance³

Study Synopsis

This study aimed to find out why school counselors ($N = 38$) choose to use or not use Naviance and whether their “acceptance and use of Naviance enhances counseling practices, job productivity, and efficiency” (p. 369). The study incorporated the following data sources: a survey questionnaire, face-to-face semi-structured interviews, Naviance staff usage reports (showing the number of times counselors accessed the platform), and Naviance engagement reports (showing which features counselors used to support students' academic, college, and career development).

The school district in the study gave Naviance implementation “a low to medium priority, with the expectation that school counselors would at least minimally use the technology” (p. 372). Most (66%) of the school counselors reported that they used Naviance daily, 24% indicated weekly usage, 5% reported using it monthly, and 5% said they did not use Naviance at all.

Most of the counselors reported that they liked using Naviance and had a favorable attitude toward it, and that it “was desirable to use for academic and related counseling purposes” (p. 377). Additionally, most of the school counselors in the study agreed that Naviance:

- Has a friendly interface for students and counselors
- Requires minimal effort
- Is easy to use
- Is clear and understandable
- Increases job-related effectiveness and productivity
- Enhances counseling practices
- Is useful



Naviance

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In sum, most of the counselors in this study used Naviance frequently and felt that it enhanced their job performance. In particular, counselors liked that Naviance better enabled them “to introduce college-related material to help students develop individual education plans, identify courses, provide social and emotional resources, and advise on graduation status and college eligibility” (p. 379) and that they could also use it to share information with teachers, administrators, and parents.

Recommendations

Several counselors attributed their comfort level and positive attitude in part to having participated in multiple trainings on the platform. For the small minority of counselors who did not have a favorable impression of Naviance, some of their frustrations with the program stemmed from slow internet connections and limited access to computer labs. Therefore, Naviance training should be thorough and offered on an ongoing basis, and barriers to well-networked computers should be removed.

The authors offered two recommendations for future practice regarding Naviance: “leveraging the reports and analytic features to emphasize programmatic effectiveness and student outcomes, and infusing the college-related curriculum into subject matter classes” (p. 380).

Accuracy of High School Seniors’ Self-Report in Naviance of Intended College Enrollment²

Study Synopsis

This study was less about evaluating the performance of Naviance as a platform and more about using survey data collected through Naviance to measure the accuracy of high school seniors’ self-report of intended college enrollment. The authors compared the college that students reported in Naviance that they planned to attend, with students’ actual college enrollment records obtained through the National Student Clearinghouse.

A high percentage (81%) of self-reported intended enrollments matched actual enrollments, which the authors asserted was consistent with summer melt studies that found that “approximately 80% of college-intending students enroll in college the fall following high school graduation” (p. 7). The following factors increased the probability of an accurate self-report: higher socioeconomic status, higher GPA, higher number of college acceptances, having a college entrance exam score, and enrolling in a public (versus private) college.

Recommendations

For districts whose typical students diverge significantly from the above factors, the authors recommended using alternative sources of college enrollment information (such as National Student Clearinghouse) in addition to students’ self-reports.

Naviance’s Influence on Students’ College Application Choices⁴

Study Synopsis

This was a high-quality, quasi-experimental study focusing on a particular feature of the Naviance platform that “shows students how, for individual colleges, their academic profiles compare with previously admitted schoolmates. This information is conveyed in



Naviance

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scattergrams, which are scatterplots showing the grade point average (GPA) and SAT (or ACT) scores of prior applicants from a student's school to a specific college as well as the admissions decision each of these applicants received" (pp. 220–221).

The purpose of the study was to determine the causal impact of this Naviance feature on students' college application choices. The study yielded the following four main findings (p. 222):

- Access to a college's admissions information increases applications and attendance at that college, especially for students with a high admissions probability.
- Students prefer to apply to colleges where they are most similar to previous admits.
- Students use the average admissions lines and the color coding of their scores as heuristics to simplify their application choices.
- The information in Naviance leads application portfolios and attendance choices to reflect the set of colleges with visible and relevant information.

The impacts were not uniform across students, however, but depended in part on student and school characteristics:

Naviance increases 4-year college enrollment for low-income, Black, and Hispanic students when it provides them with information about local public colleges where they are likely to be admitted. It also increases the selectivity of colleges attended by students who are shown information on many relevant match and reach colleges. Students who attend high schools with weaker college-going cultures, however, are more likely to be nudged to less selective colleges based on the available scattergrams. (pp. 224–225)

Recommendations

Essentially, the study established that the scattergram feature of Naviance, which displays information only for the colleges to which previous cohorts of schoolmates applied, influences students to constrain their college application choices to only those colleges. Thus, students "in schools with suboptimal college choices among older cohorts will be nudged to repeat the suboptimal choices of their peers" (p. 257). The author thus advised districts to pool data across high schools to give students admissions information for a much wider landscape of colleges. She also recommended that counselors and/or Naviance staff provide guidance to students on how to interpret the scattergram data so that they better understand their limitations.



Naviance

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Attendance & Truancy Supports

Prepared by the Department of Research & Performance Management

Attendance & Truancy Supports

April 2022

Author: Hannah Pallotta

Strategy

Memphis-Shelby County Schools (MSCS) received Elementary and Secondary School Emergency Relief (ESSER) funds which aim to address the ongoing impacts that the Covid-19 pandemic has on K-12 education. A portion was allocated to increasing attendance and decreasing truancy. MSCS will invest funds in this area to provide additional support in improving attendance and truancy rates. The following positions will be included in the investments to improve culture and climates as well as increase attendance rates and attendance accuracy: Discipline/Registration/Truancy Analysts, Advisors, and Specialists.

Key Findings

- Many studies indicate that transportation tends to be the biggest barrier for school attendance. Funding creative solutions, like partnering with public transit, creating a 'walking-school bus' for neighborhood students, or increasing school bus use should be highly considered to reduce absenteeism.
- Attendance Works, the leading experts on the topic, recommend two strategies to increase attendance: mentors and teacher home visits.
- Graduation coaches have had positive effects on graduation rates and attendance rates.
- Incentivizing families, as well as students, can increase attendance, especially for younger students who rely on family for transportation.

Overview of Absenteeism: Barriers to Attendance & Effects of the Pandemic on an Already Existing Issue

- A study done in February 2019 found that an estimated 6.5 million students (13% of all students) nationwide miss 15 or more days in a given school year.¹
- Hillsborough County Public Schools (HCPS in Tampa, Florida) began the 2021-2022 school year fully in-person, but less than a week into school more than 2.5% of students (5,600) had to quarantine.
- Twenty-two percent (22%) of Newark students were chronically absent from remote learning last fall, even after they laxed their attendance rules. This was 5 percentage points more than the year before.²
- During the pandemic, more than half of Detroit students were considered chronically absent (missing 10% or more of the school year).
- See the Appendix C for a chart showing the change in attendance rates from 2020-21 to 2021-22 in over 30 school districts, with the median change being -6.2%.
- Nearly 100,000 students missed school when classes resumed on January 3rd, 2022 after winter break in Miami-Dade County.³
- One study looked at absenteeism in Detroit, MI students; they found that the biggest barriers to attendance were transportation and health issues.⁴



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- The barrier of transportation was due to “unreliable or inconsistent availability of transportation, weak social networks, parents’ work schedule, unsafe conditions, and more.”⁴

Solutions

- Chalkbeat Detroit hosted a panel of researchers and Michigan community partners to discuss how to increase school attendance. Panelists agreed that Districts sharing their data with community partners is vital to having their help.⁵
- Two strategies discussed during that conversation that are shown to increase attendance are parent-teacher home visits and mentoring.^{5, 6, 7}
 - Including a community partner involved in the home visits could work even better to create connection.
 - It is important that teachers are compensated for their extra time.
 - Teenagers could be mentors to younger students in paid positions. This strategy could be especially beneficial for the community by reducing chronic absenteeism in younger students, grounding them to someone in the community, and giving teenagers a chance to bring in income to their families.
- Creative ways to incentivize students to come to school can include: school-based health services, breakfast for all, laundry at school, rethinking recess, threshold greetings, activities at the school that families can come to, tutoring or intervention based on needs, etc.^{8, 9}
- Develop new, system-wide solutions for school transportation, including creative solutions for back-up transportation to ensure that all children have access to school-provided transportation.⁴ Such creative solutions could include capitalizing on public transportation or creating a ‘walking-school bus’ where teachers and parents lead an organized walk to school and pick up students on their way.¹⁰ One study found that Kindergarteners who took a bus to school were “absent fewer days over the year and were less likely to be chronically absent than students who took other transportation methods to school.”¹⁰ This study was the first of its kind to study a nationally representative sample of Kindergarteners and shows the validity of having a bus program. The study also found that the association between taking the bus to school and lower absenteeism was experience by all students, rather than affecting one group more so than the others.¹¹
- Graduation coaches have had positive effects on graduation rates and attendance rates. A graduation coach works in a middle or high school and works with the school’s attendance officer to track daily attendance and ensures there is open communication with students, families, and staff. One of their biggest objectives is to connect with students who often skip class to help increase graduation rates. These coaches work with data to identify trends in student absences and find ways to encourage students to attend class.¹²
 - “Students across various high schools who were assigned a graduation coach attended classes more often, had fewer instances of misbehavior, and earned more credits than at-risk students who were not assigned a graduation coach. In addition, the students with a graduation coach were suspended less frequently and missed fewer days of school.”¹²



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- In a focus group about having reduced chronic absenteeism in their schools, principals of MSCS discussed what their schools have done to create change around this issue. Many of these principals mentioned incentivizing students for having improved attendance, tracking their data weekly or even daily, and having a positive school culture. One principal mentioned that the greatest change in attendance for their at-risk students came after they began to incentivize parents with a raffle for grocery store gift cards.¹³
- The literature seems to lean towards school level solutions such as changing the school climate around attendance (rather than rewarding perfect attendance begin to reward students who have improved their attendance) and by pairing students with a mentor or coach rather than creating district level positions to analyze the district's attendance data. Data should be analyzed at the school level. Attendance Works is the leading expert on this topic. They recommend that school leaders who oversee attendance data should be trained to understand and use data effectively.⁷



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Appendix C

CGCS District	Overall Change from 2020 to 2022
Rochester	-11.6%
Indianapolis	-10.6%
Philadelphia	-10.6%
Pittsburgh	-9.4%
Oklahoma City	-9.4%
St. Louis	-8.7%
Boston	-8.6%
Long Beach	-8.0%
Portland	-7.8%
Houston	-7.3%
Austin	-7.2%
Chicago	-7.2%
St. Paul	-7.0%
San Diego	-6.7%
Tulsa	-6.5%
Shelby County	-6.4%
Anchorage	-6.2%
Dayton	-5.9%
Milwaukee	-5.9%
San Francisco	-5.4%
Kansas City	-4.6%
Orange County	-4.6%
Guilford County	-4.5%
Fresno	-4.2%
Denver	-3.8%
Palm Beach	-3.3%
Oakland	-3.1%
Cleveland	-3.0%
Jefferson	-2.2%
Baltimore	-1.7%
East Baton Rouge	0.3%
Hillsborough	0.8%
Hawaii	6.0%



Attendance & Truancy Supports

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Educators

Teacher Bridge Program

January 2021

Author: Angelica Thompson, Ph.D.

Strategy/Accountability

Provide a 4-week summer bridge for new teachers, paraprofessionals, & afterschool stakeholders (Summer 2021).

Description

Instructional support personnel receive targeted professional development on curriculum, science of reading, RTI, & instructional strategies to engage all learning styles.

Key Recommendations

- DO use experienced teachers who apply, interview, & provide recommendations to become mentors.^{6,11}
- DO hold sessions frequently & in-person if possible, otherwise, online or by phone^{6,10}.
- DO pair mentors with mentees that teach at the same school; when intra-school pairing is not possible, keep mentor-mentee ratio low.^{6,9}
- DO individualize mentoring – differentiated by need, as well as subject- & grade-based.^{6,12}
- DO focus on mentee’s mental & emotional health. Provide mentors with the capacity to look beyond professional goals and address a mentee’s need for emotional support. Offer quarterly retreats for rest, reflection, & networking with other teachers in similar situations, reducing feelings of isolation & loneliness.⁶
- DO provide PD for mentors—a mentor-the-mentor component.^{6,11} Mentors can receive Cognitive Coaching training, have experienced coaches serve as their mentors, & obtain PD on learning how to collect evidence, provide actionable feedback & guide themselves & their mentees through self-reflection.
- DO provide administrative/principal support for PD.^{7,9,12} Principals can show support by arranging school schedules so that expert teachers can teach model lessons or meet with new teachers one-on-one or in small groups. They can also help teachers prioritize professional goals & identify & recommend PD opportunities.
- DO support the principals who are implementing the program.⁶
- DO include a research, evaluation, & tracking system to document mentoring outcomes.^{6,7}
- DO include observations of mentees teaching class live or via video. ^{6,9,11}
- DON’T tie mentorship sessions to teacher evaluations and allow mentors & beginning teachers to work openly, without fear of consequences. “They need to learn how to be a teacher in a nonthreatening environment.”⁶
-



Teacher Bridge Program

Prepared by the Department of Research & Performance Management

Comprehensive teacher induction reduces teacher attrition.

- Having a quality mentor from the same field and collaboration or common planning time with other teachers in the same subject reduced teacher turnover by 30% and 43%, respectively.^{8, 14}
- One district's PD strategies led to a reduction in the annual attrition rate from 31% from 2000–2003 to 9% from 2013–2016. The district also saw a reduction in new teachers' third-year attrition rates from 70% to 26%.¹¹

Comprehensive teacher induction improves student outcomes.

- Comprehensive induction consists of mentoring (matching new teachers with one or more experienced & trained teacher), common planning time & collaboration ongoing PD, peer networking opportunities, standards-based evaluation.²
- Inducted teachers develop better teaching practices that meet students' learning needs & improve achievement². A district reform in Philadelphia yielded about a 17-point increase in the percentage of elementary students proficient in Math and Reading between 1996 and 2000.^{13, 16}
- Among the findings from the 1998 to 1992 pilot study of the California New Teacher Project (CNTP) were that compared to other new teachers, beginning teachers in the pilot project more consistently motivated diverse students to engage in productive learning activities & they gave the same complex, challenging assignments to classes of diverse students as they did to classes that were more ethnically & culturally homogeneous.^{2, 4}
- Participation in a high intensity teacher induction program (orientation, same-subject mentor, PD, program evaluation, & follow-up) explained 74% of the variance in minority students' reading achievement.¹⁵

Mentors need specific skills to help new teachers focus on issues of diversity & equity in teaching.

- Pedagogical knowledge for equity—knowledge of ways to teach diverse youth & knowledge of ways to teach or guide teachers during mentoring sessions to promote equitable learning—92%.¹
- Knowledge of contexts relevant to teaching diverse youth—strategies/resources to help teachers learn local culture, community & about negotiating the professional world & Broader social & structural issues related to diversity & inequities in society & schooling—43.2%.¹
- Knowledge of what diverse learners bring to class—help new teachers learn about assets diverse learners bring to class; “help novices move beyond viewing culturally & linguistically diverse youth as ‘problems’”; move past “‘othering’ of students as different from themselves, to a closer knowing of individuals”—27%.¹
- Mentor's knowledge of self-related to diversity & equity—mentors need to have engaged in self-reflection on their attitudes toward educational inequities; know his or her own beliefs, values, & practices related to “diverse youth & the challenge of closing the achievement gap”—27%.¹



Teacher Bridge Program

Prepared by the Department of Research & Performance Management

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Create Our Own - Teaching Profession

Prepared by the Department of Research & Performance Management

Create Our Own - Teaching Profession

April 2022

Author: Patrick L. Shipp, Ph. D.

Strategy

Launch **Create Our Own** teacher program, a long-term approach to recruit and train prospective teachers from within the Memphis-Shelby County community and bring greater racial, ethnic, and cultural diversity to the educator workforce so that students have access to post-secondary opportunities and improve the culture and climate of schools.

Introduction

Teachers are needed to teach in K-12 schools, due both to the teacher shortage, retention issues, and teacher diversity gap across the United States. **Grow Your Own (GYO)** teacher programs are associated with positive outcomes for students, teachers, and their communities—especially for diverse student populations. GYO programs engage in a variety of strategies that aim to recruit students from local school communities.^{1, 5, 9} Currently, only one high school within MSCS offers Teaching as Profession program aimed at preparing students for post-secondary credentials and careers as educators. The courses within this program include Fundamentals of Education, Teaching as a Profession I and II, and Teaching as a Profession Practicum.

Strategies to Increase Interest in Teaching Across K-12^{2, 4, 6}

Exposure

- Hold career day presentations in the elementary grades
- Administer high school career interest surveys
- Host education-focused career fairs in high school
- Support career exploration activities in the middle grades

Experience

- Sponsor clubs with a focus on education, such as Future Teachers of America, at the middle and high school fairs
- Host colleges with education programs at college fairs
- Recruit students for participation based on district needs related to cultural diversity recommendations
- Provide job-shadowing experiences for select middle and high school students

Education

- Provide training and experiential learning opportunities for aspiring teachers
- Align instruction with standards such as those published by Educators Rising and Teacher Cadets
- Offer internships for Grade 12 students
- Offer scholarships or loan forgiveness
- Incorporate training related to cultural responsiveness.



Create Our Own - Teaching Profession

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Best Practices for Grow-Your-Own Program Implementation

- **Although academic research on GYO programs is limited, individual programs have demonstrated positive effects on outcomes, including students' expressed interest in teaching and pursuit of teaching degrees.**
 - A school district participating in the Pathways2Teaching program reported that around 50 percent of graduating students pursue education majors in college, while 37.3 percent of students who completed the South Carolina Center for Educator Recruitment, Retention, and Advancement Teacher Cadet Program during the 2017-2018 school year reported planning to pursue a career in teaching.³
 - A survey conducted to evaluate the Recruiting Washington Teachers program found that 59% of recent graduates reported that the program increased their interest in a teaching career.³
- **GYO programs address equity and diversity in the teaching workforce in addition to increasing the overall pool of potential teachers.** Grow your own programs can support equity and diversity by partnering with community organizations to support students and bring cultural knowledge into the curriculum. For example, Pathways2Teaching's curriculum incorporates action research projects focused on equity and diversity.⁸
- **Postsecondary partnerships can include dual enrollment components that allow students to earn credits in high school.** The Recruiting Washington Teachers program recommends that participating districts develop articulation agreements with local colleges and universities.³ GYO programs generally recruit through two pre-collegiate pathways.
 - **Pre-Collegiate, Selective:** The South Carolina Teacher Cadet program is heralded as one of the oldest and better-known GYO programs in the nation. Located on the campus of Winthrop University, this state-funded program is committed to the recruitment of high-achieving, homegrown students. In 2015-2016, 32% of completers were non-White and 22% were males. Significantly, the program was available in 70% of all South Carolina public high schools.⁸
 - **Pre-Collegiate, Non-selective:** The Pathways2Teaching program allows students to earn up to nine college credits and certification as a paraprofessional while in high school. Unlike the Teacher Cadet model, this program makes no distinction between high- or low- achieving students. Chosen by their commitment to youth in their respective inner-city schools, carefully-selected "pathways teachers" work collaboratively in partnership with university staff who play a supportive role in the classroom. Today, many of its graduates are either enrolled in teacher education programs or in other areas like social work. Pathways2Teaching now has programs in nine



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Colorado high schools located in seven school districts, including three in Nashville.⁸

- **Partnerships with postsecondary and community institutions can improve the long-term outcomes of GYO programs.** For example, the South Carolina Teacher Cadet Program partners with the Center for Educator Recruitment, Retention, and Advancement to provide curriculum, training, and support for teachers. Likewise, the Pathways2Teaching program is led by professors at the University of Colorado, Denver, who provide professional development for high school instructors.³

Current Tennessee Programs

In June 2021, the Tennessee Department of Education announced the award of \$4.5 million in GYO grants to help establish partnerships between Educator Preparation Providers and local school districts and create innovative pathways to becoming a teacher in Tennessee for free. These grant funds will remove barriers to the teaching profession by providing funds to entirely cover tuition, textbooks, and fees for all selected participants, while providing dual licensure or initial licensure opportunities with an additional endorsement.⁷



Create Our Own - Teaching Profession

Prepared by the Department of Research & Performance Management

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Strategic Teacher Retention and Recruitment

Prepared by the Department of Research & Performance Management

Strategic Teacher Retention and Recruitment

April 2022

Author: Hannah Pallotta

Key Findings

- One study found that mentoring dosage was positively and significantly related to new teacher retention after one year.
- Mentor programs for new teachers should last at least two years, and time with mentors should be protected and frequent.
- School climate that prioritizes teacher wellbeing—including reducing classroom size and giving teachers designated time for planning and rest—and promotes teacher engagement can increase teacher retention.
- Newly placed principals in districts that had a principal pipeline were more likely to stay at their school for two years than principals at other districts.

ESSER Strategic Teacher Retention & Teacher Recruitment Program Overview

Memphis-Shelby County Schools (MSCS) received Elementary and Secondary School Emergency Relief (ESSER) funds which aim to address the ongoing impacts that the Covid-19 pandemic has on K–12 education. A portion was allocated to strategic teacher retention and establishing sustainable teacher recruitment models. The Human Resources team will implement and expand a variety of strategies designed to recruit and retain the best District leaders and teachers in the nation, immerse them in professional development to embrace and teach. The District will expand the leadership development pipeline for School and District Leadership to Central Office Employees.

Teacher Turnover

- School-level turnover is higher in schools where 75% or more of the students are eligible for free and reduced lunch.¹
- 44% of new teachers leave the profession within five years.²
- Schools with highly rated principals with high achievement growth have less turnover than schools with lower rated principals.⁶
- It can cost a district around \$75,000 to replace one school principal.⁶
- Teachers of color leave teaching at a higher rate than white teachers, citing dissatisfaction with organization conditions as their primary reason for leaving. Teachers of color disproportionately work in schools located in higher-poverty districts with fewer resources and little administrative support. Teachers of color often feel pressure to represent the needs of students of color, and this extra labor often goes unnoticed, without recognition or compensation.¹
- Teachers who earn their credentials through alternative certification programs are 25% more likely to leave their schools than teachers who participate in traditional certification programs.¹



Strategic Teacher Retention and Recruitment

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Mentoring Programs

Teacher Mentor Programs

- One study found that “mentoring dosage was positively and significantly related to new teacher retention after one year”.³ About 97% of new teachers in the moderate-dosage group and 94% of new teachers in the high-dosage group were retained in the district between school years compared with only 78% of new teachers in the low-dosage group. New teacher retention was significantly higher in the two higher dosage groups than in the low-dosage group. The difference between the moderate and high groups was negligible.
- A successful mentor program should include:⁴
 - Rigorous mentor selection based on qualities of an effective mentor
 - Qualities could include evidence of outstanding teaching practice, strong intra- and inter-personal skills, experience with adult learners, respect of peers, current knowledge of PD, etc.
 - Ongoing beginning teacher PD
 - Ongoing PD and support for mentors
 - Protected time for mentor-teacher interactions
 - Mentors and beginning teachers should have 1.25–2.5 hours per week to allow for the most rigorous mentoring activities. This time should be protected by teachers and administrators.
 - Multi-year mentoring
 - At least two years; research suggests that most deep learning happens in the second and third years of teaching.
 - Professional teaching standards and data-driven conversations
 - Data collection and documentation of mentor conversations should happen whenever possible.
 - Clear roles and responsibilities for administration
 - Administrators play a key role in ensuring the success of the mentor program by setting boundaries around the time that beginning teachers have with their mentors, creating a positive culture of ongoing learning, and communicating with new teachers about their needs.
 - Collaboration with all stakeholders
- Induction programs or beginning teacher mentor programs have a positive impact on teacher commitment and retention, classroom instructional practices, and student achievement.⁵

Principal Pipeline/Mentor Programs

“The term principal pipeline is shorthand for the range of talent management activities that fall within a school district’s scope of responsibility when it comes to school leaders.”⁶ These activities include selective hiring and placement, preparation opportunities for principals and assistant principals, having leader standards, and the process of induction, evaluation, and continued support.

- One study of over 10,000 school districts nationwide found that “respondents from large districts were more likely than respondents from medium districts to report having school leadership standards, processes to encourage individuals to become



Strategic Teacher Retention and Recruitment

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school leaders, standards-aligned evaluation, objective criteria—such as performance tasks to evaluate principal candidates, a dedicated office of school leadership.”⁶

- In this same study, virtually all districts indicated that they provided individual coaching to at least some of the principals in their district, with roughly 60% of these districts reporting that they provided individualized coaching or mentoring to all principals in their district.
- Another study that looked at the efficacy of a principal pipeline found that newly placed principals in districts that used a principal pipeline were nearly 6 percentage points more likely to remain in their school for two years than principals in districts that did not use this model.⁷

School Supports

School administration can provide four supports to increase teacher retention:²

- Support teacher wellbeing
 - Create a culture that fosters staff wellness that includes fair leave policies, good benefits, a safe environment, sufficient supervision, the support and resources to do the work, and processes for shared decision making.
 - One district made Wednesdays an asynchronous learning day where teachers were able to leave at 1pm. This gives teachers time to plan and refresh.
 - Reducing classroom size enables teachers to focus more time on individual students and reduces all other work (paperwork, parent interaction, classroom management, etc.).
- Promote teacher engagement
 - Having open and early communication about initiatives
 - Keeping initiatives realistic
- Create a supportive school climate
- Monitor teacher retention and recruitment
 - Identify and track trends in teacher attrition

Principal supports for new teachers:⁴

- Frequent communication/having an open-door policy so new teachers are comfortable discussing issues
- Regular classroom observations and feedback
- Protected time for new teachers for mentorship, PD, and classroom observation.
- Limiting extracurricular expectations; ensuring that new teachers can focus on their classroom
- Support when new teachers communicate with parents
- Essential information on the evaluation process early in the year
- A complete school orientation



Strategic Teacher Retention and Recruitment

Prepared by the Department of Research & Performance Management

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May 2022

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Key Findings

- Proximity learning can help school districts mitigate the current teacher shortages in the United States.
- Students felt supported and engaged when taught using synchronous online instruction compared to asynchronous.
- Lessons taught by proximity instructors can be recorded and stored as a resource for students.
- Quality of the instructor is still more important than the method of delivery in promoting student learning.
- Technology issues can frustrate students and cause missed instruction.

Strategy

Memphis-Shelby County Schools (MSCS) allocated a portion of the ESSER funds to utilize proximity teachers. In the 2021–22 school year, specific high school instructors teaching courses with end-of-course exams (EOC) were partnered with proximity teachers who supported those classrooms virtually. MSCS utilizes proximity teachers as support teachers instead of as the teacher of record.

Overview

Proximity teaching is a term “used to describe a teacher’s nearness to [their] students during a lesson.”¹ In a proximity learning model, students can be together in a classroom with the teacher online or the students and their teacher can connect online at the same time all from different locations. Proximity learning is often used by K–12 districts to shore up staff shortages, deliver virtual instructions, and to add specialty courses for districts.¹⁵

As a method of instruction, proximity learning is the same as synchronous online learning.¹⁵ This brief will synthesize research on both topics and use the terms interchangeably. Additional best practices for proximity learning are listed in Appendix D.

Benefits

Synchronous online learning is not new in the field of education, although historically not as popular as asynchronous online learning environments.¹⁸ However, due to the Covid-19 pandemic the popularity in synchronous online instruction has increased and more research is emerging on this method of instruction in K–12 settings.

- Classrooms that utilized proximity learning did not have as many challenges as traditional students whose schools had to shift to online learning due to the pandemic.⁸



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- Compared to asynchronous online learning, students felt more supported, had more peer-centered activities, had more feedback, and reported higher satisfaction when their online teacher was delivering instruction synchronously.⁴
- Synchronous online “webinars” were more effective at promoting student content knowledge than asynchronous and face-to-face courses, but there was no difference in students’ satisfaction levels between the groups.⁴
- “Advantages of using a synchronous learning environment include real time sharing of knowledge and learning and immediate access to the instructor to ask questions and receive answers.”¹⁷
- Lessons taught by the proximity teacher can be recorded and added into a video library for students to access later or if they need additional support on the topic.¹³

Disadvantages

- Blended online classrooms did not outperform “purely online classes” indicating that the quality of instruction is more important than the type of delivery of the instruction.^{3, 9}
- Classroom management is still a concern with proximity learning. When the students are in a room together, but their instructor is virtual, local distractions can be difficult to manage.¹⁸
- Technology issues with proximity teaching can cause students to miss instruction and is often frustrating for students.⁷

Outcomes

Many of the studies on proximity learning or synchronous instruction used survey and interview data focused on student engagement, motivation, connectedness, or satisfaction.^{5, 6, 11, 12, 16} Few studies used rigorous quantitative methods or large sample sizes to show the outcome of learning in a synchronous environment compared to face-to-face or asynchronous in a K–12 setting. The studies showed disparate findings and often cited the impact of the quality of the instructor as paramount to student performance.^{3, 9}

- Synchronous courses have shown more frequent and better-quality student interactions than asynchronous courses which in turn led to higher course exams and course performance.³
- However, findings from an Algebra I course found that students in the synchronous section had lower end-of-course scores than those in the asynchronous section.²
- Proximity Learning® conducted an internal study over six terms and found that students taught by proximity learning instructors averaged an 80.3% (a B to B–average) which was sufficient for college admissions.⁸

Conclusion

While proximity teaching and synchronous learning are not new in education, their use in K–12 educational settings has expanded due to the Covid-19 pandemic. School districts can utilize this instruction method to alleviate the staffing strain due to teacher shortages. When looking at student academic outcomes confounding results were found, though students’ attitudes and engagement in proximity courses were typically more positive.



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Appendix D

Best Practices in Proximity/Synchronous Learning Environments⁹

- 1. Provide a welcome message that is displayed approximately 15 minutes before class.**
- 2. Notify Class of your presence and encourage equipment checks.**
- 3. Provide easily accessed methods to connect/enter the virtual classroom**
- 4. Record class meetings.**
- 5. Discourage unnecessary use of video sharing.**
- 6. Maintain virtual office hours.**
- 7. Pre-load software that will be used during class presentation.**
- 8. If possible have more than one monitor/display.**
- 9. Equip your teaching/production facility with various video options.**
- 10. Use electronic Textbooks and other reference materials.**
- 11. Encourage (require?) students to participate in virtual study sessions/group meetings.**
- 12. Integrate additional software systems to augment the virtual classroom experience.**

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